CFD-K10

SERVICE MANUAL

AEP Model
UK Model

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

COMPACT
disc
DIGITAL AUDIO

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wavelength 780 nm Emission duration: Continuous Laser output: Less than 44.6μW* *This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.
Spindle speed	200 r.p.m. to 500 r.p.m. (CLV)
Error correction	Sony Super Strategy Cross Interleave Read Solomon Code
Number of channels	2
Frequency response	20 – 20,000 Hz $^{+1}_{-1}$ dB
Wow and flutter	Below measurable limit

Radio seciton

Frequency range	FM: 87.6 – 107 MHz (AEP, UK, Germany model) 87.5 – 108 MHz (Italian model) AM: 531 – 1602 kHz

	FM	AM
IF	10.7 MHz	450 kHz

Antennas	FM: Telescopic antenna AM: Built-in ferrite bar antenna

Tape recorder section and general

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 140 sec. with Sony cassette C-60
Frequency response	• TYPE I (NORMAL) cassette: 60 – 14,000 Hz • TYPE II (CrO2) cassette: 60 – 15,000 Hz
Speaker	Full-range speakers: 8 cm dia, cone type
Maximum power output	6,5 W + 6,5 W (at 12 ohms, 10 % harmonic distortion)

MICROFILM

CD SECTION	Model Name Using Similar Mechanism	D-20
	Optical Device Name	KSM-224AAN
DECK SECTION	Model Name Using Similar Mechanism	CFD-770L
	Tape Transport Mechanism Type	MF-K10-65

Outputs	Headphones jack (stereo minijack) For 45 – 68 ohms impedance headphones
Power requirements	AEP, Germany, Italian model: 220 – 230VAC, 50Hz UK model: 240VAC, 50Hz DC 12 V, 8 R20 (size D) batteries for CD radio cassette-corder DC 4,5 V, 3 R6 (size AA) batteries for clock/timer/memory DC 3 V, 1 lithium battery (CR2025) for remote commander
Power consumption	AC 22 W
Battery life	Batteries for radio cassette-corder

	Recording	Playback	CD playing
Sony SUM-1 (NS)	approx. 2 H	approx. 1.5 H	approx. 0.5 H
Sony Alkaline AM1(N)	approx. 6 H	approx. 4.5 H	approx. 1.5 H

For clock/timer/memory: Apprpx. 1 year

Dimensions	480 × 133 × 157 mm (w/h/d) (19 × 5$^1/_4$ × 6$^1/_4$ inches) incl. projecting parts and controls
Weight	Approx. 7 kg, incl. batteries (Approx. 15 lb 7 oz)
Supplied accessories	AC power cord (1) Remote commander (1)

Design and specifications subject to change without notice.

CD RADIO CASSETTE-CORDER

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

- Parts Identification 4
- Power Source 6
- Setting the Clock 7
- Playing Discs 8
- Adjusting Sound 9
- Various disc Playing Modes 10
- Listening to Radio Programs 12
- Playing Back Tapes 14
- Recording CD Sound 15
- Automatic Editing on the CD for Recording by Specifying the Tape Length 16
- Recording Radio Sound 17
- Using the Built-in Timer 18

2. MECHANICAL OPERATION

2-1. Operation of the cam gear 21
2-2. FWD mode 21
2-3. REV mode 22
2-4. FF (REW) mode 23
2-5. FWD AMS mode 23
2-6. REV AMS (REW/FF) mode 23

3. PIN DESCRIPTION

3-1. Pin Description 24

4. DISASSEMBLY

4-1. Cabinet (front) Assy 27
4-2. Speaker 27
4-3. Control Board 28
4-4. Cabinet (upper) Assy 28
4-5. MD Block Assy 29
4-6. Audio-CD Board 29
4-7. Cabinet (rear) Assy 30
4-8. Power Transformer 30
4-9. VOL Assy, Driver Board 30

5. MECHANICAL ADJUSTMENTS

Deck Section 31

6. ELECTRICAL ADJUSTMENTS

Deck Section 32
Tuner Section 35
CD Section 36

7. DIAGRAMS

7-1. Circuit Boards Location 40
7-2. Printed Wiring Boards — Tuner Section — 41
7-3. Schematic Diagram — Tuner Section — 42
7-4. Printed Wiring Boards — Audio/CD Section — 46
7-5. Schematic Diagram — Audio/CD Section — 51
7-6. Schematic Diagram — System Control/Display Section — 55
7-7. Printed Wiring Boards — System Control/Display/Driver/Deck Section — 59
7-8. Schematic Diagram — Driver/Deck Section — 64
7-9. Printed Wiring Boards — Volume/Power Section — 67
7-10. Schematic Diagram — Volume/Power Section — 69
7-11. Semiconductor Lead Layouts 71

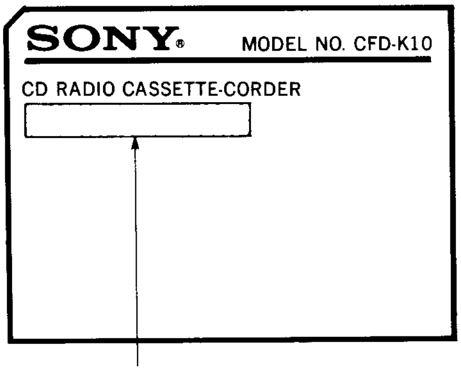
8. EXPLODED VIEWS

8-1. Cabinet Section 79
8-2. Cabinet (upper) Assembly Section 80
8-3. Cabinet (rear) Assembly Section 81
8-4. Cabinet (center) Assembly Section 82
8-5. CD Mechanism Block Section 83
8-6. Cassette MD Block Section 84

9. ELECTRICAL PARTS LIST 85

MODEL IDENTIFICATION

—Model Number Label—



AEP, Germany, Italian model: AC: 220−230V~50Hz 22W
UK model: AC: 240V~50Hz 22W

For AEP model

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

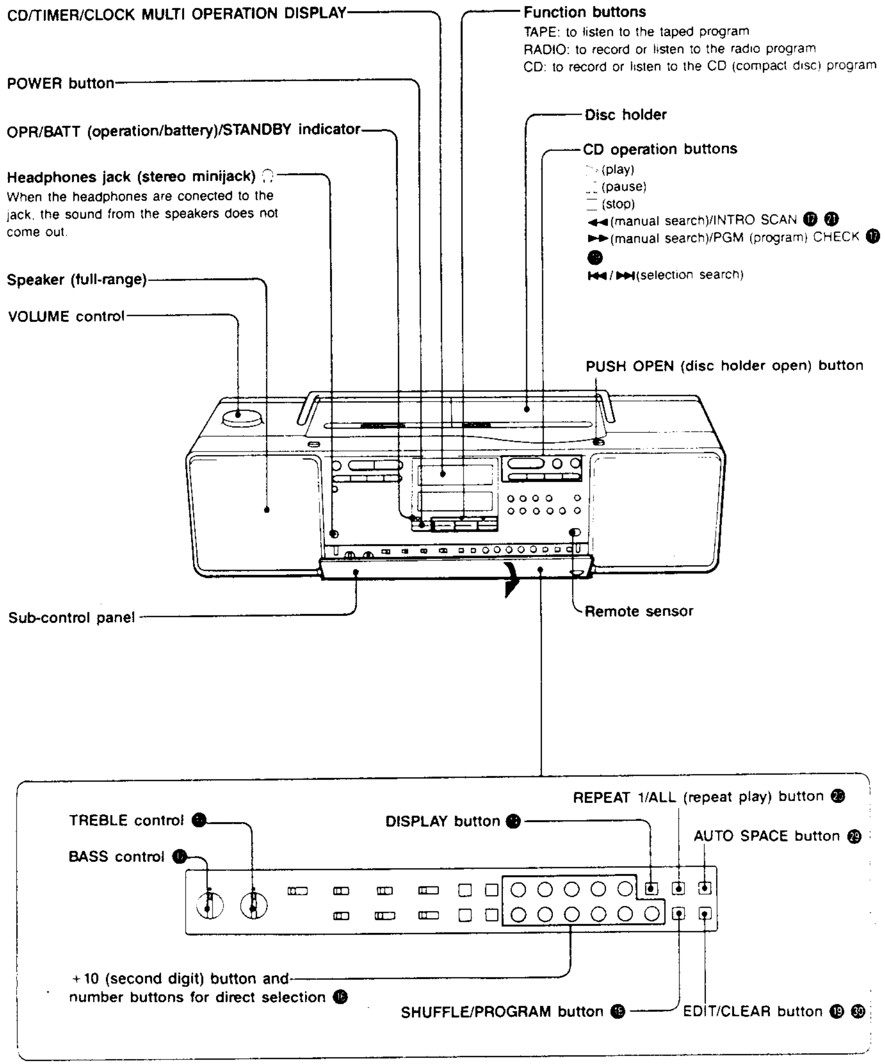
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

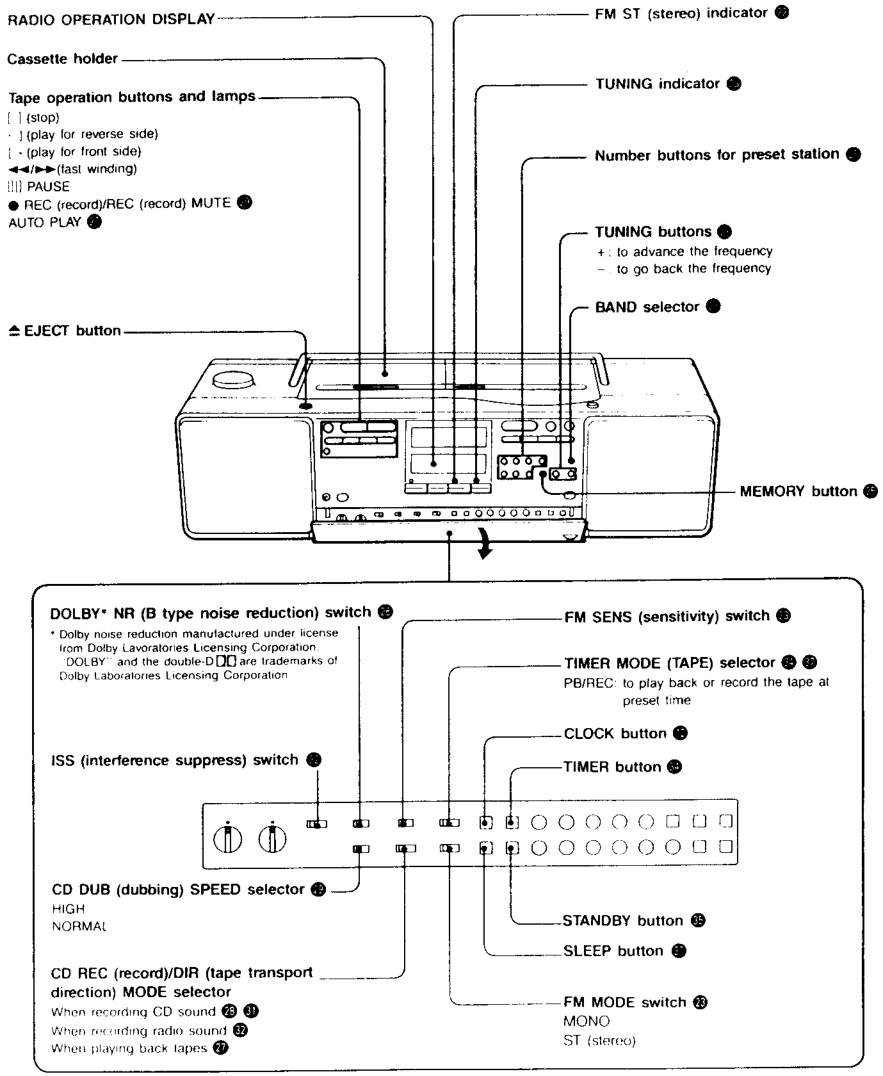
Parts Identification

Refer to the pages indicated in ● for details.

CD Player Section


CD/TIMER/CLOCK MULTI OPERATION DISPLAY
POWER button
OPR/BATT (operation/battery)/STANDBY indicator
Headphones jack (stereo minijack) 🎧
When the headphones are conected to the jack, the sound from the speakers does not come out.
Speaker (full-range)
VOLUME control
Function buttons
TAPE: to listen to the taped program
RADIO: to record or listen to the radio program
CD: to record or listen to the CD (compact disc) program
Disc holder
CD operation buttons
▷ (play)
⏸ (pause)
□ (stop)
◀◀ (manual search)/INTRO SCAN ⓱ ㉑
▶▶ (manual search)/PGM (program) CHECK ⓱ ●
⏮/⏭ (selection search)
PUSH OPEN (disc holder open) button
Sub-control panel
Remote sensor
TREBLE control ●
BASS control ⓱
DISPLAY button ●
REPEAT 1/ALL (repeat play) button ●
AUTO SPACE button ㉙
+10 (second digit) button and number buttons for direct selection ●
SHUFFLE/PROGRAM button ●
EDIT/CLEAR button ⓳ ㉚

Cassette-corder, Radio and Clock Section


RADIO OPERATION DISPLAY
Cassette holder
Tape operation buttons and lamps
[ ] (stop)
◁ (play for reverse side)
▷ (play for front side)
◀◀/▶▶ (fast winding)
⏸ PAUSE
● REC (record)/REC (record) MUTE ●
AUTO PLAY ●
⏏ EJECT button
FM ST (stereo) indicator ●
TUNING indicator ●
Number buttons for preset station ●
TUNING buttons ●
+: to advance the frequency
−: to go back the frequency
BAND selector ●
MEMORY button ●
DOLBY* NR (B type noise reduction) switch ●
* Dolby noise reduction manufactured under license from Dolby Lavoratories Licensing Corporation. "DOLBY" and the double-D ⅅ are trademarks of Dolby Laboratories Licensing Corporation
ISS (interference suppress) switch ●
CD DUB (dubbing) SPEED selector ●
HIGH
NORMAL
CD REC (record)/DIR (tape transport direction) MODE selector
When recording CD sound ㉘ ㉛
When recording radio sound ㉜
When playing back tapes ㉗
FM SENS (sensitivity) switch ●
TIMER MODE (TAPE) selector ● ●
PB/REC: to play back or record the tape at preset time
CLOCK button ●
TIMER button ●
STANDBY button ㉟
SLEEP button ●
FM MODE switch ㉓
MONO
ST (stereo)

This section is extracted from instruction manual.

SERVICING NOTES

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVARSEL !

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri-Eksplosjonsfare.
Ved utskifting benyttes kun batteri som
anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

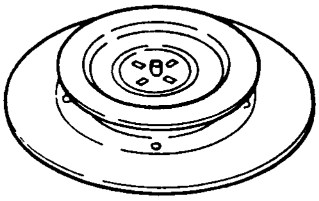
During repair, pay attention to electrostatic breakdown and also, use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

CHUCK PLATE JIG ON REPAIRING

On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

- Code number of Chuck Plate Jig : X-4918-255-1



NOTES ON LASER DIODE EMISSION CHECK

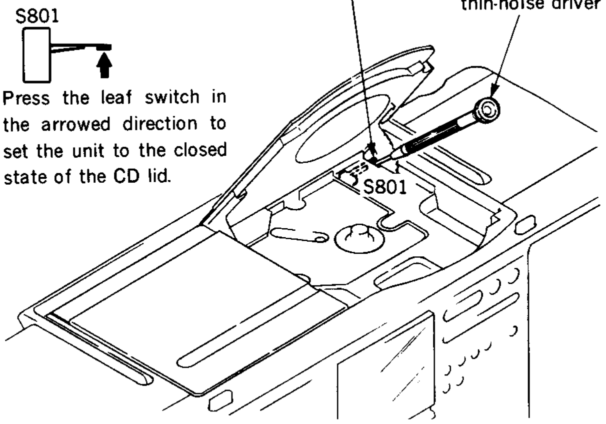
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25cm away from the objective lens.

HOW TO CHECK THE LASER DIODE

In this unit system, the laser diode will not emit light unless the CD lid is closed and S801 (leaf switch) is turned off with the POWER switch ON and press the function button to "CD".

- Checking Procedure

1. Turn ON the POWER switch and press the function button to "CD".
2. Open the CD lid.
3. As illustrated, while turning off S801, press the ▷ key.
4. Observe the objective lens and verify that the laser diode emits light. If no light is emitted, the automatic power control circuit or optical pick-up block may be at fault. Note that the laser diode is energized for about three seconds for focus search.



Using a thin-noise driver, pressing the protrusion at the end of the S801 (leaf switch) will turn off the S801 and set the unit to the closed state of the CD lid.

Press the leaf switch in the arrowed direction to set the unit to the closed state of the CD lid.

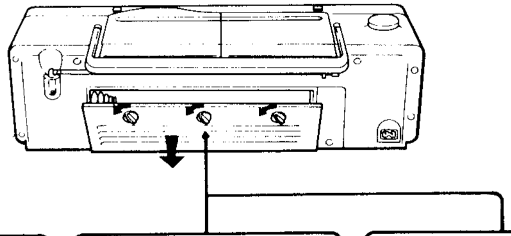
Power Sources

Two separate power sources are needed to operate this unit: one for the unit itself and one for the clock/timer/memory.

You can use the unit either with house current, or batteries. In either case, be sure to insert batteries for the clock/timer/memory.

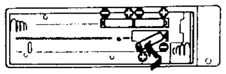
Note
When inserting or replacing the batteries, remove a compact disc from the disc holder. Otherwise, the disc may be damaged if it falls from the disc holder.

Batteries

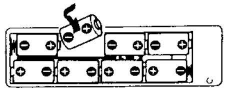


Be sure to remove the AC power cord from the unit. The unit cannot be operated on the internal batteries when the AC power cord is connected to the unit.

Insert three R6 (size AA) batteries for clock/timer/memory.



Insert eight R20 (size D) batteries.

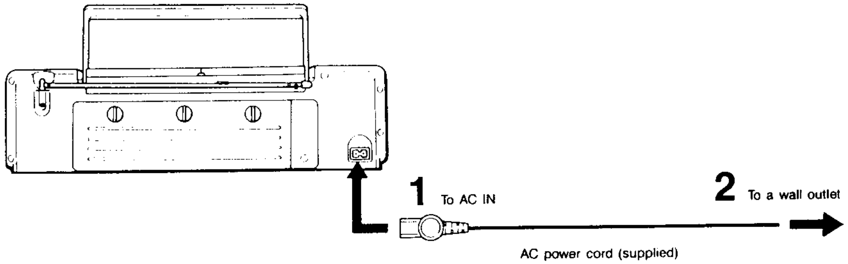


Note
For critical recordings or disc playing, operating the unit on house current is recommended.

Battery replacement
Batteries to operate the CD radio cassette-corder: when the batteries are weak, the OPR/BATT/STANDBY indicator will become faint. In this case, if you try to operate the recorder, the power might be turned off. Replace all the batteries with new ones.

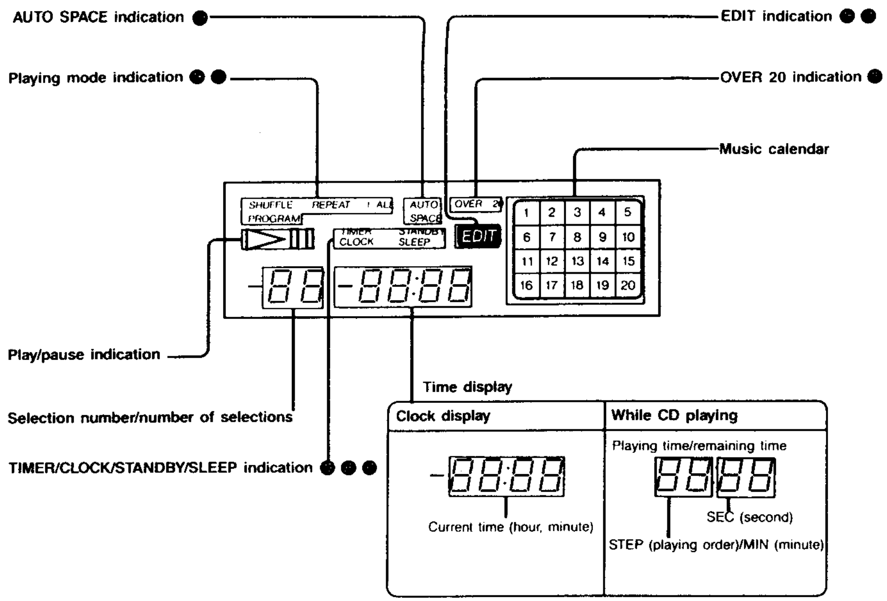
Batteries for the clock/timer/memory of the unit:
when the batteries are weak, the indication in the display window becomes faint. Replace the batteries with new ones. When you replace the batteries for clock/timer/memory, be sure to connect the AC power cord to the unit and to the wall outlet and turn the power on before you remove the batteries.

House Current

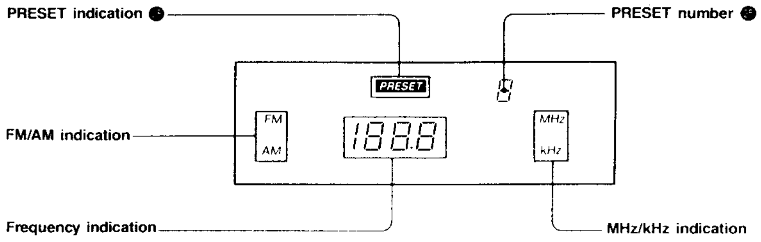


Display Section

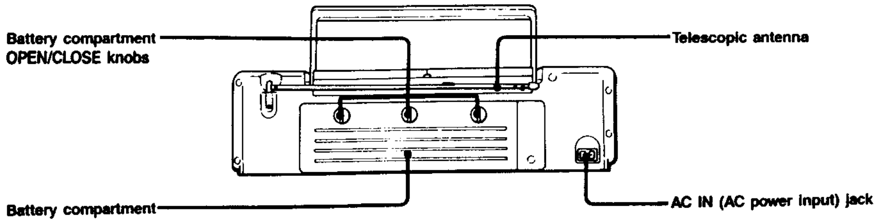
For CD playing and clock


AUTO SPACE indication ●
EDIT indication ● ●
Playing mode indication ● ●
OVER 20 indication ●
Music calendar
SHUFFLE REPEAT 1 ALL
PROGRAM
AUTO SPACE
OVER 20
EDIT
TIMER STANDBY
CLOCK SLEEP
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
Play/pause indication
Time display
Selection number/number of selections
Clock display
While CD playing
TIMER/CLOCK/STANDBY/SLEEP indication ● ● ●
Playing time/remaining time
Current time (hour, minute)
SEC (second)
STEP (playing order)/MIN (minute)

For radio reception

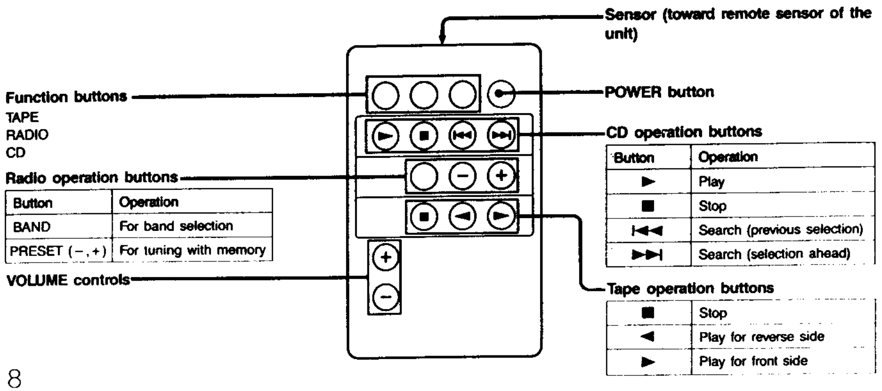

PRESET indication ●
PRESET number ●
PRESET
FM/AM indication
FM
AM
MHz
kHz
Frequency indication
MHz/kHz indication

Rear Panel


Battery compartment OPEN/CLOSE knobs
Telescopic antenna
Battery compartment
AC IN (AC power input) jack

Remote Commander

You cannot turn on the unit by the remote commander when you operate the unit on the internal batteries.


Sensor (toward remote sensor of the unit)
Function buttons
TAPE
RADIO
CD
POWER button
CD operation buttons
Radio operation buttons
Tape operation buttons
VOLUME controls

Radio operation buttons

Button	Operation
BAND	For band selection
PRESET (−, +)	For tuning with memory

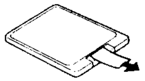
CD operation buttons

Button	Operation
▶	Play
■	Stop
⏮	Search (previous selection)
⏭	Search (selection ahead)

Tape operation buttons

■	Stop
◀	Play for reverse side
▶	Play for front side

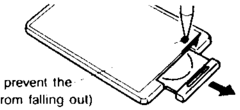
Before use



The battery for the remote commander has already been installed. Remove the insulating tape first.

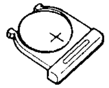
Battery replacement

1 Pull out the lithium battery holder while sliding the lock toward the right.



Lock (to prevent the battery from falling out)

2 Install the lithium battery (CR2025) into the holder.



With the (+) side facing out

3 Replace the holder into the remote commander.

Note on the remote commander

Keep the commander away from extremely hot or humid places. Use the remote commander within 5 m from the unit.

When to replace the battery

For normal operation, battery life lasts up to half a year. When the commander does not operate at longer distances, the battery need to be changed. Replace the battery with a new CR2025 lithium battery.

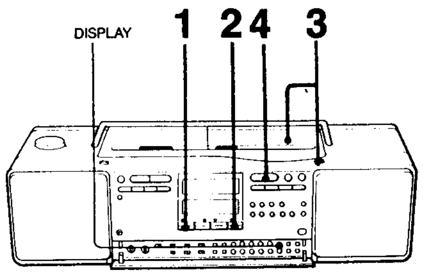
Notes on lithium battery

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

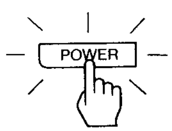
Playing Discs

You can play an 8 cm (3-inch) CD without using an adaptor for it.
You can operate the unit with the remote commander.

Make sure the STANDBY indication does not appear in the display window.

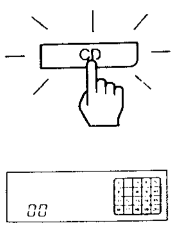

DISPLAY
1
2
4
3

1 Press.



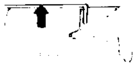
The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

2 Press.



3 1

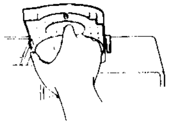
Keep the handle down.



Press PUSH OPEN.

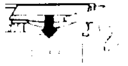
2

Place a disc with the labeled surface facing up.

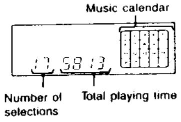


3

Close the disc holder.

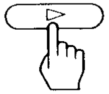


The disc starts to rotate and the indication appears as follows.

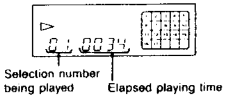

Music calendar
13 58 13
Number of selections
Total playing time

The indication will return to "00" after about 4 seconds.

4 Press



Play starts from the beginning of the disc.


▷
01 0034
Selection number being played
Elapsed playing time

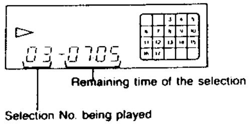
Note

Do not open the disc holder while playing the disc.

To Display Remaining Time

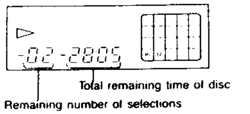
The selection being played

Press DISPLAY once.


▷
03 -0705
Remaining time of the selection
Selection No. being played

The disc being played

Press DISPLAY twice.


▷
-02 -2805
Total remaining time of disc
Remaining number of selections

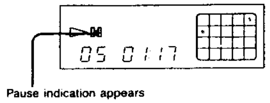
For normal display, press DISPLAY again.

Note

During shuffle or repeat play, the remaining time of the disc being played cannot be displayed.

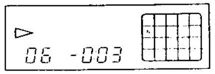
Information Display

While CD player is set in pause


05 01 17
Pause indication appears

Between selections

The remaining time for the next selection is displayed.



To adjust the volume

Use the VOLUME control.

CD operation buttons

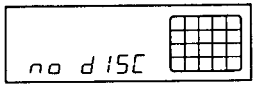
If you want to	press
play	▷
stop play	□
pause for a moment	▯▯
resume play after pause	▯▯
remove a disc	□ → PUSH OPEN

After use

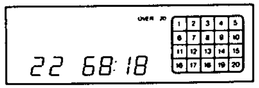
Press POWER again.

Notes

- If the disc is played near a TV or radio, noise may occur on the TV or radio.
- If there is no disc in the disc holder, the following indication appears in the display window.



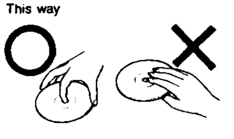
- Up to 20 selections are displayed in the music calendar.
- If the disc has more than 21 selections, OVER 20 appears in the display window.


OVER 20
22 68:18

- The remaining time of the selection from the 21st selection appears as "- - - : - -". Elapsed playing time is displayed while playing.
- To check the number of selections and total playing time, press DISPLAY inside the panel when the disc stops to play.

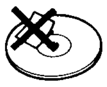
Notes on Compact Disc

This way

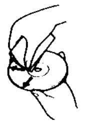


Handle the disc by its edge, and to keep the disc clean, do not touch the surface.

Not this way



Do not stick paper or tape or write anything on the surface.



Before playing, clean the disc with the optional CD cleaner.
Wipe the disc from the center out.

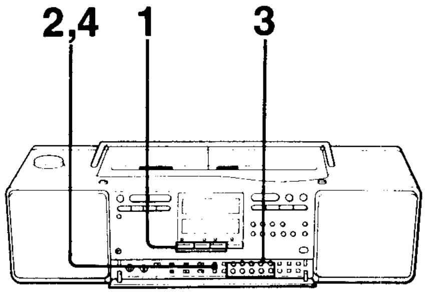
Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for analog discs.

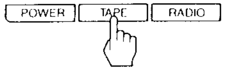
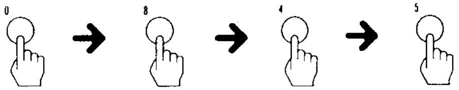
After playing, store the disc in its case.

Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight where there can be a considerable rise in the temperature.

Setting the Clock

Be sure to insert three R6 (size AA) batteries for the clock/timer/memory in the battery compartment.



1 Be sure the function buttons do not light. When the POWER is on, press any button except CD.  	**2** Press for about 4 seconds until the CLOCK indication appears in the display window. 	**3** Press the number buttons inside the panel to enter the hour and then the minute. (If the hour and/or minute has one digit, be sure to press 0 before the number.) **Example:** To set to 8:45  	**4** Press again. The clock starts when you press the button.
0:00	CLOCK -0:00	CLOCK 0-00 → CLOCK 08-0 → CLOCK 084- → CLOCK 0845 "–" shows the position where the next number will be entered.	8:45

Clock system

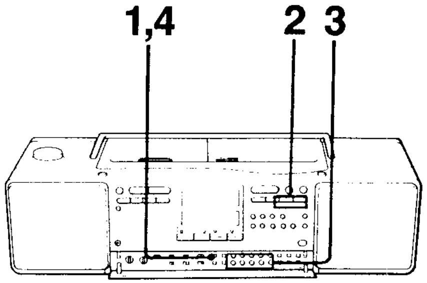
0:00 = midnight
12:00 = noon

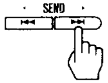
To set the clock exactly to the second
Use the radio or telephone time signal. Set the time indication to a few minutes in anticipation of a setting time. Then, press CLOCK simultaneously with the radio or telephone time signal.

To check the current time
The display window shows the current time except when the CD is playing. To check the time while the function is set to the CD playing mode, press CLOCK.

To change One Digit

Example: To change 1:01 to 1:00.



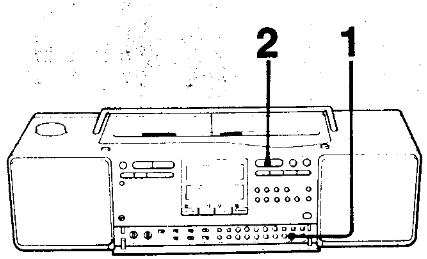
1 Press for about 4 seconds until the CLOCK indication appears in the display window. 	**2** Press three times until "–" comes to the last digit.  "–" moves to the left by pressing ⏮.	**3** Press the number button. 	**4** Press again. The clock starts.
CLOCK - 1:01	0-01 → CLOCK 01-1 → 010- "–" shows the position where the next number will be entered.	CLOCK 0 1:00	1:00

Various disc Playing Modes

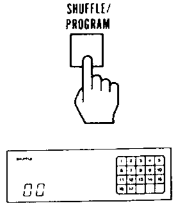
Each time you press SHUFFLE/PROGRAM inside the panel, the playing mode changes in sequence as indicated in the display window: SHUFFLE → PROGRAM EDIT → no indication (normal play).

To Play Selections in Random Order—Shuffle Play

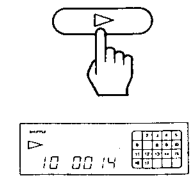
Make sure the STANDBY indication does not appear in the display window.



1 Press until the SHUFFLE indication appears.



2 Press.

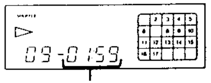


The selection number will disappear from the music calendar when the selection is finished.

To stop shuffle play
Press □.

To release suffle play
Press SHUFFLE/PROGRAM twice until the SHUFFLE indication disappears from the display window. Normal play begins from the selection being played.

To display the remaining time of the selection being played
Press DISPLAY inside the panel once.



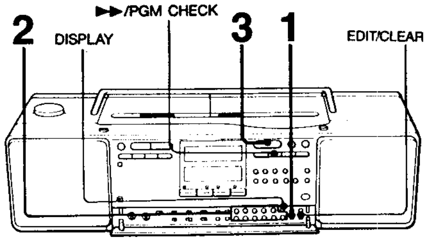
The remaining time of the selection being played

To start shuffle play from normal play
Press SHUFFLE/PROGRAM during normal play.
Shuffle play begins from the selection being played.

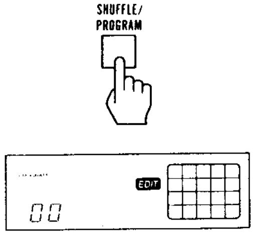
Note
During shuffle play, the remaining time of the disc is not displayed.

To return to the normal display
Press DISPLAY again.
From the 21st selection, the remaining time will be displayed as "- - - : - -".

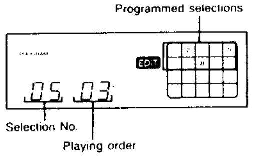
To play the Selections in the Order Desired—Program Play



1 Press until the PROGRAM EDIT indication appears.

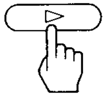


2 Press the number buttons inside the panel in the order desired.



Up to 21 selections can be memorized.

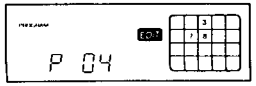
3 Press.



To stop program play
Press □.

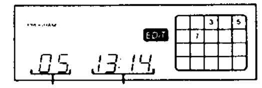
To reprogram the selections
- To erase the previous program, open and close the disc holder and repeat the steps from the beginning. Be sure to turn the POWER on, otherwise, the selections programmed cannot be erased.
- To erase the last selection programmed, press the EDIT/CLEAR button inside the panel.
  Each press of EDIT/CLEAR erases one selection. Press the number button to program in a new order.

To program a pause
Be sure that the AUTO SPACE indication does not appear in the display window.
Press ▯▯ at the position desired. Each press of ▯▯ counts as one selection.



During program play the player will be set in pause when it comes to ▯▯. To resume playing, press ▯▯ again.

To check the total playing time of the selections programmed
After programming, press DISPLAY. The total playing time appears in the display window.



Selection No Playing time

If there is a pause in the programmed selections, the playing time after the pause appears.
To return to the normal display, press DISPLAY again.

Programmed selections will be erased when:
- you press the □ button twice during play.
- you press the □ button once during the stop mode.
- you open the disc holder during the CD playing mode.

To check the programmed selections
After programming, press ►►/PGM CHECK. You can check the selections from the beginning. Each press of ►►/PGM CHECK shows the programmed selections in order.

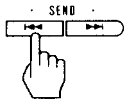
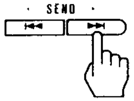
When the programmed selections are finished
The selection number in the music calendar disappears one by one, but the programmed selections are memorized until you erase the programmed selections.

To release program play and return to normal play
Press SHUFFLE/PROGRAM inside the panel until the PROGRAM EDIT indication disappears from the display window. Normal play begins from the selection being played.

To Locate the Beginning of a Selection (AMS*)

Be sure the SHUFFLE and PROGRAM **EDIT** indications are not displayed in the display window. Otherwise, press the SHUFFLE/PROGRAM or EDIT/CLEAR button inside the panel.

Press ⏮ or ⏭ during play or pause.

To locate a previous selection	To locate a selection ahead
Press ⏮ once to locate the beginning of the selection being played. Press continuously to locate a previous selection.	Press ⏭ once to locate the next selection after that being played. Press continuously to locate a selection ahead.
	

In pause mode
The player pauses at the beginning of each selection.
To start playing, press ►II.

During program play
The function of ⏮ or ⏭ plays selections in the memorized order.

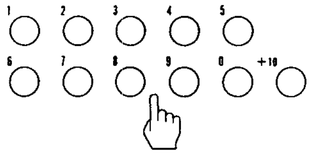
During shuffle play
The disc does not locate a previous selection but the beginning of the selection being played when the ⏮ button is pressed.

* AMS: Automatic Music Sensor

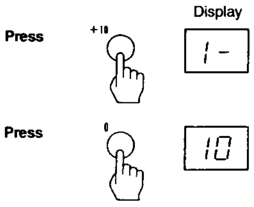
For Selecting a Selection Desired Directly

Press a selection number by using the number buttons inside the panel.

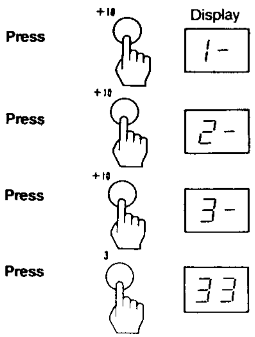
Press a selection number you want to listen to, and the disc will start to play.



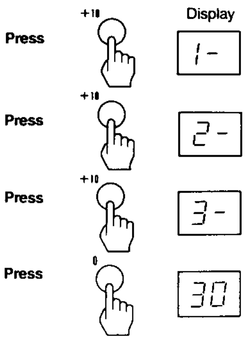
Example:
To select the 10th selection



To select the 33rd selection

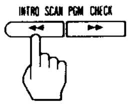
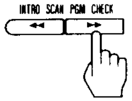


To select the 30th selection



To Search for a Particular Point in a Selection (Search)

Press ◄◄ or ►► during play or pause.

To review disc playing	To advance disc playing
	

Release the button at the point desired, located by monitoring the high-speed sound.

In the pause mode, you can search rapidly. However, you cannot hear the sound. Observe the time display.

Adjusting Sound

To Obtain a Powerful Bass

The CCCR (Common Cavity Common Resonance) system produces a powerful bass with the use of the Auto Dynamic Bass Feedback system.

Notes on how to obtain a powerful bass efficiently:

- There is a bass reflex duct on the right side of the unit. Place the unit more than 5 centimeters from the wall or other obstruction. Because the bass reflex duct is a way out for the bass sound, do not cover the duct.
- Be sure to close the battery compartment lid.

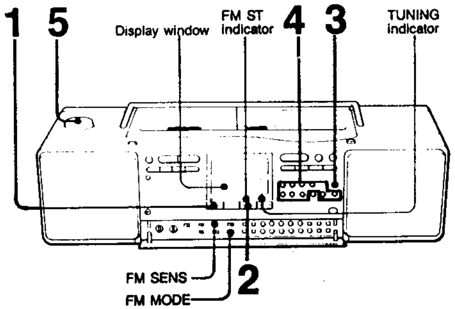
To Adjust the Treble and Bass Tones

Rotate the TREBLE and BASS controls clockwise or counterclockwise to get the tone desired.

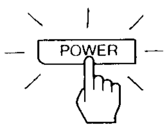
Listening to Radio Programs

You can operate the unit with the remote commander.

Make sure the STANDBY indication does not appear in the display window.

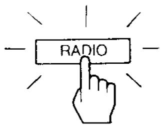


1 Press.

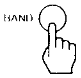


The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

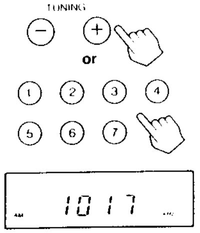
2 Press.



3 **Select the band desired, FM or AM.**

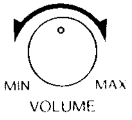


4 **Tune in a station desired or press the number button if the stations are preset.**



When the station desired is tuned in, the TUNING indicator lights up.

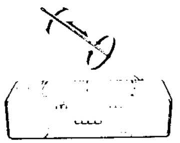
5 **Adjust the volume.**



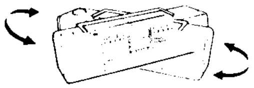
To turn off the radio
Press POWER again.

To improve receiving condition

FM



AM



Note
If you use the remote commander supplied near the unit while listening to an AM program, noise might be heard.

When an FM stereo program is tuned in
FM ST indicator lights up.

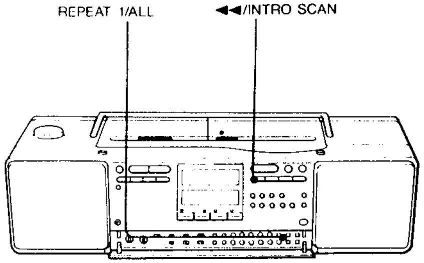
If the received FM stereo signal is too weak
The reception becomes monaural, and the FM ST indicator will go off.

FM SENS (sensitivity) selector
While listening, normally set the selector (located inside the panel) to DX. However, if a very strong station signal causes noise or if multipath signals are heard while listening to an FM program, set it to LOCAL. The noise will be reduced.

For better reception of a weak FM stereo program
Set the FM MODE switch to MONO. The noise will be reduced, however, the sound becomes monaural.

To Select Repeat Mode

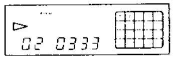
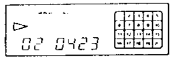
Press REPEAT 1/ALL inside the panel.
Each time you press REPEAT 1/ALL, the repeat mode changes in sequence as indicated in the display window:
REPEAT 1 → REPEAT ALL → no indication (normal play).



To stop repeat play
Press ■ .

To release the repeat play
Press REPEAT 1/ALL until the REPEAT indication disappears from the display window.

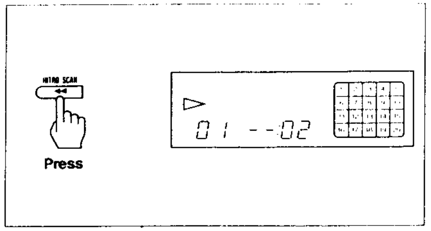
Note
During repeat play, the remaning time of the disc being played cannot be displayed.

To repeat only one selection—Repeat 1 play	**To repeat the entire disc—Repeat all play**
While playing the selection you want to repeat	While playing the disc you want to repeat.
Be sure REPEAT 1 indication appears in the display window.	Be sure REPEAT ALL indication appears in the display window.
	

To repeat the program play
During program play, press REPEAT 1/ALL. The PROGRAM REPEAT indication appears in the display window, and the programmed selections will be repeated.

To repeat the shuffle play
During shuffle play, press REPEAT 1/ALL. The SHUFFLE REPEAT indication appears in the display window, and the shuffle play will be repeated.

To Scan the Beginning of the Selections



You can scan the beginning of the selections in normal play, shuffle play and program play for 10 seconds by pressing ◀◀/INTRO SCAN while the disc player is in the stop mode.

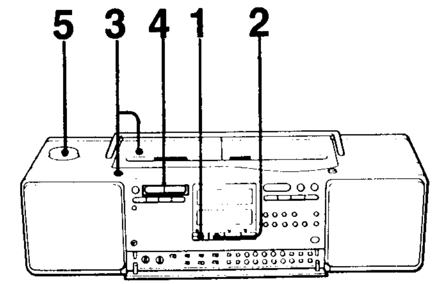
To release INTRO SCAN
Press any button for disc play.

Notes
- If a pause is programmed in program play, the INTRO SCAN function skips the pause.
- During REPEAT 1 play, the INTRO SCAN function does not work.

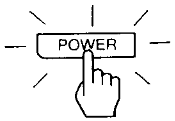
Playing Back Tapes

You can operate the unit with the remote commander.

Make sure the STANDBY indication does not appear in the display window.

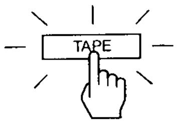


1 Press.

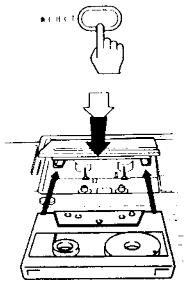


The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

2 Press.



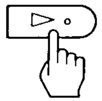
3 Insert a recorded tape.



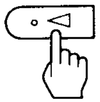
Push to close the holder.

4 Press.

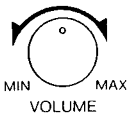
For front side



For reverse side



5 Adjust the volume.



After use
Press POWER again

For private listening
Connect stereo headphones to the ∩ (headphones) jack.

Tape operation buttons

If you want to	Press
play	◁ or ▷
stop play	□
pause for a moment	⏸ PAUSE
resume play after pause	⏸ PAUSE
advance rapidly (fast forward)	for front side: ►► for reverse side: ◄◄
rewind	for front side: ◄◄ for reverse side: ►►
remove a cassette	□ → ⏏ EJECT

During fast forward and rewind, the ◁ and ▷ lamps flash, which shows the direction of the tape.

Note
If the power accidentally cut off (for example, the AC power cord was disconnected, the batteries fell out or an interruption of the main power source occurred), it may not be possible to eject the cassette. In this case, connect the AC power cord or replace the batteries into the compartment.

If you try to operate the recorder when the OPR/BATT/STANDBY indicator is faint because of weak batteries it may turn off the power. In this case, reconnect the AC power cord or replace the batteries with new ones.

To select the DOLBY B Noise Reduction system
During playback, set the DOLBY NR switch to the same position used when recording.
ON: Recorded using the Dolby B Noise Reduction system.
OFF: Recorded without using the Dolby B Noise Reduction system.

To select playback mode
Use the CD REC/DIR MODE selector inside the panel.

	CD REC/DIR MODE selector
To play back one side of a cassette	⇄
To play back both sides of a cassette once starting from the front side to the reverse side of a cassette	↩
To play back both sides of a cassette continuously	⟲

Note
If playback starts from the reverse side of a cassette when the CD REC/DIR MODE selector is set to ⇄ or ↩, playback will be stopped automatically when the reverse side is completed.

Usable tape type
When a cassette is inserted into the cassette holder, the unit automatically identifies and adjusts the tape type with the ATS (Automatic Tape Selector) function.

Tape type	Playback	Recording
TYPE I (normal)	Can be used	Can be used
TYPE II (CrO$_2$)	Can be used	Can be used
TYPE IV (metal)	Can be used	Cannot be used

To Locate the Beginning of a Selection—AMS*

During playback, press the appropriate button.

The cassette is wound rapidly in forward or reverse direction, and playback will start automatically when the beginning of the selection is reached.

	During playback of front side ▷	During playback of reverse side ◁
To repeat the selection being played	◄◄	►►
To locate the selection ahead	►►	◄◄

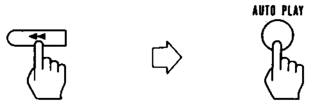
Note
If there is noise in the blank spaces between selections, or if the space is less than four seconds long, AMS will not operate.

* AMS: Automatic Music Sensor

To Rewind and Start from the Beginning Automatically—Auto Play

To start from the beginning of the front side
While the deck is in the stop mode, press ◄◄.
Make sure the ◁ lamp is flashing.

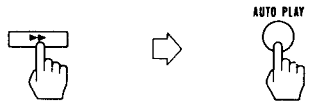
Press.



◁ lamp is flashing.
▷ lamp lights up.

To start from the beginning of the reverse side
While the deck is in the stop mode, press ►►.
Make sure the ▷ lamp is flashing.

Press.



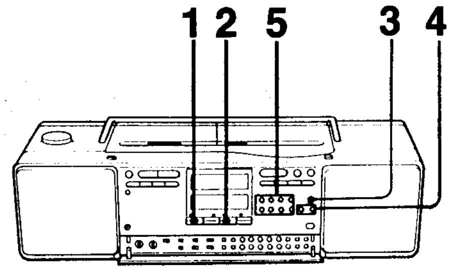
▷ lamp is flashing.
◁ lamp lights up.

The cassette will be wound rapidly and playback will start automatically from the beginning.

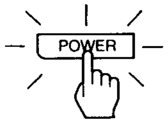
Memory Preset Tuning

Once you preset the stations, you can listen to the station desired just by pressing the number buttons inside the panel. You can preset up to 7 stations each for FM and AM programs (total 14 stations).

Make sure the STANDBY indication does not appear in the display window.

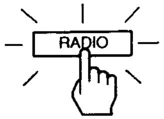


1 Press.

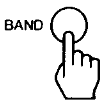


The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights when the AC power cord is connected to the unit.)

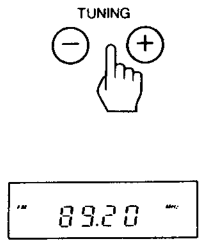
2 Press



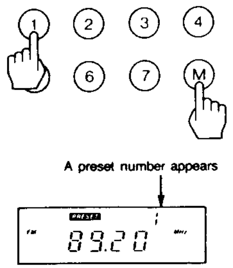
3 Select the band desired, FM or AM.



4 Tune in a station desired.



5 Press a preset number while keeping MEMORY pressed.



to tune in a preset station

1 Select the band desired.

2 Press the preset number on which the station is memorized.

To erase the previous station

Enter a new station on the preset number, and the previous station will be erased automatically.

Automatic Editing on the CD for Recording by Specifying the Tape Length

The CD player automatically edits the selections on a disc according to the tape length.
The recording length is up to 99 minutes and up to 20 selections can be edited.

Press EDIT/CLEAR inside the panel. Each time you press EDIT/CLEAR, the editing mode changes in sequence as indicated in the display window: EDIT 1 → EDIT 2 → no indication (normal recording)

EDIT 1: The CD player selects the selections beginning from the first one on the disc, summing up the playing time. When the total playing time exceeds the specified tape length, the last selection is recorded on the reverse side of the tape.

EDIT 2: The CD palyer selects the selections beginning from the first one on the discs, summing up the playing time. When the total playing time exceeds the specified tape length, the last selection is eliminated. Then, the CD player looks for a selection whose length is within the remaining tape and substitutes it for the eliminated one.

Example: To record on a 46 minute-tape (23 minutes for each side)

Disc 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9
1–4: 20 min.; 5: 5 min.; 6: 2 min.; 7: 4 min.; 8: 8 min.; 9: 2 min.

EDIT 1: Front side: total 20 minutes
1 2 3 4
Reverse side: total 21 minutes
5 6 7 8 9

EDIT 2: Front side: total 22 minutes
1 2 3 4 6
Reverse side: total 19 minutes
5 7 8 9

Notes

- Use a tape which is longer than the total playing time.
- To record the selections which cannot be recorded on the specified tape, after the selection order has been programmed for automatic editing, press SHUFFLE/PROGRAM and record them in the program play.
- When the disc holder is open, the selection order programmed for automatic editing will be erased.

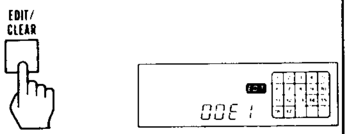
To Program for Automatic Editing

1 **Insert a disc. (Steps 1 to 3 in "Playing Discs")**

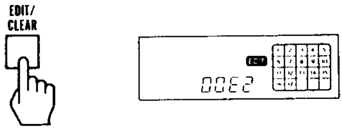
- Make sure the disc is not moving.
- While playing the disc, the automatic editing function does not operate.
- Make sure the SHUFFLE, PROGRAM EDIT or AUTO SPACE indication disappears from the display window.

2 Select EDIT 1 or EDIT 2.

EDIT 1: Press once.

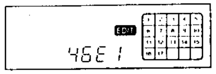


EDIT 2: Press twice.

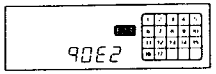


3 **Enter the total tape length by pressing the number buttons inside the panel.**

Example: 46-minute tape
Press ④ and then ⑥.

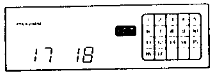


Example: 90-minute tape
Press ⑨ and then ⓪.

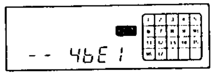


4 Press

When the total playing time is shorter than the tape length, the player will be set in the program mode. Continue the steps for recording.

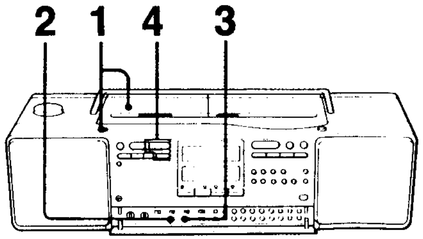


When the total playing time is longer than the tape, change the tape for a longer one and repeat from step 3 (e.g. 46-minute tape).



To check the programmed selections
Press ▶▶/PGM CHECK. You can check the selections from the beginning one by one.

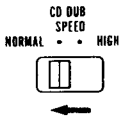
To Record the Selections Programmed



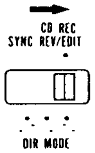
1 **After proceeding the steps 1 to 4 in "To Program for Automatic Editing", insert a blank cassette into the deck.**

Use TYPE I (normal) or TYPE II (CrO2) tape.

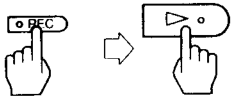
2 **Set to NORMAL.**



3 **Set to SYNC REV/EDIT.**



4 **While keeping REC/REC MUTE pressed, press ▷ ·.**



The CD player will start automatically. Start recording from the front side.

When recording on the front side is finished
The CD player is set to the pause mode, the cassette deck starts to erase the remaining tape on the front side with high speed
Then, the tape transport direction changes to reverse.
The CD player automatically starts to play and the cassette deck starts to record on the reverse side.

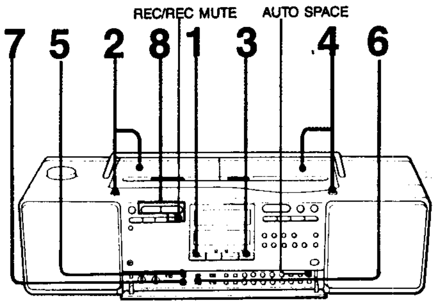
When all the selections are recorded
Both CD player and the cassette deck are set in the stop mode.

To stop recording
Press of the CD player and of the cassette deck.

After recording
Press POWER again

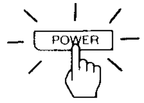
Recording CD Sound

Make sure the STANDBY indication does not appear in the display window.



Note
If the unit is operated on the internal batteries while recording, the power might be turned off if the batteries are too weak. For recordings, operating the unit on house current is recommended.

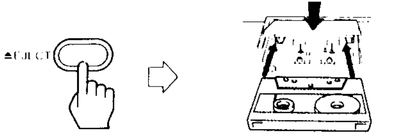
1 Press.



The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

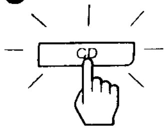
2 Press.

Use TYPE I (normal) or TYPE II (CrO2) tape.



Push to close the holder.

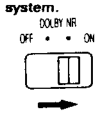
3 Press.



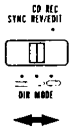
4 Insert a disc.

See page 15.

5 Set to ON when you record using the DOLBY B Noise Reduction system.



6 Select the tape transport direction.

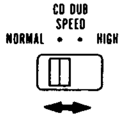


	CD REC/DIR MODE selector
To record on both sides of a cassette	Set to ⮒ or ⟲.
To record on one side of a cassette	Set to ⇄.

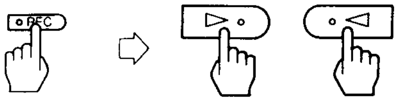
Both-sides-recording should be started from the front side.

7 Select CD recording speed.

For high speed recording: set to HIGH.
For normal recording: set to NORMAL.



8 With REC/REC MUTE pressed, press [· (to record from the front side)or ·] (to record from the reverse side).



The disc will start to play after about 2 seconds and at the same time the recording will automatically start.

To stop recording
Press □ of the CD player. The tape will automatically stop.
(The tape does not stop if ▯▯ PAUSE is pressed.)

If the disc comes to an end
Recording will automatically stop (synchronized stop).

After use
Press POWER again.

The recording level is adjusted automatically.
The settings of VOLUME, BASS and TREBLE will not affect the recording level.

Notes on high speed recording

- While high speed recording, you cannot use the DOLBY B Noise Reduction system. When playing back the tape recorded at high speed, set the DOLBY NR switch to OFF.
- While high speed recording, the buttons on the CD player other than [ ], ▯▯ and DISPLAY cannot be operated.
- Use high speed recording only for continuous recording.
- While recording, do not change the setting of the CD DUB SPEED selector.

CD Synchronized Reverse Recording

You can record a disc on both sides of the tape without a break in the middle of the selection by using synchronized reverse function.
Set the CD REC/DIR MODE selector inside the panel to SYNC REV/EDIT.
When the front side of the tape runs out in the middle of a selection, the selection will be automatically recorded from the beginning on the reverse side of the tape. Erase the unfinished selection on the front side later.

To Record in Program/Shuffle Mode

1. Follow the steps 1 to 4 as described in "Recording CD Sound".
2. Select program or shffle play. (See page 18.)
3. Follow the steps 5 to 8 as described in "Recording CD Sound"

To Record Throughout a Cassette Tape

Set the CD REC/DIR MODE selector to ⮒.

When the tape runs out in the middle of a selection, the recording continues to the reverse side of the tape. With this system, the tape transport direction is reversed by searching the transparent portion of the leader tape with a quick reverse sensor. To listen to a tape with a cassette deck with auto-reverse function, this recording method is recommended.

Synchronized Recording of a CD Program

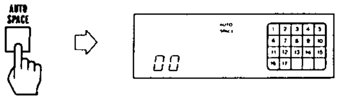
Synchronized recording with a CD can be performed by using the pause function of the CD player and the cassette deck.

1. Insert the disc to be recorded and press ▯▯ of the CD player.
2. After proceeding with the steps 2 to 7 as described in "Recording CD Sound", press ▯▯ PAUSE of the cassette deck. Then, follow the step 8.
3. Press ▯▯ PAUSE of the cassette deck.
   After about one second, the CD player starts to play and recording starts.

To Record the Blank Spaces on the Tape

To play from the beginning of the selection desired (AMS), a four-second blank space is required between the selection.

Recording CD programs—Auto space function
Press AUTO SPACE.



A four-second blank space is automatically recorded on the tape.

Press AUTO SPACE again for normal recording.

Note
During high-speed recording, this auto space function does not operate.

Recording other sources than CD—Record muting
During recording, just before the portion to be eliminated begins, press REC/REC MUTE. A four-second blank space is automatically recorded on the tape.
The pause indicator flashes (record muting activates) and after about 4 seconds, the indicator lights up. The tape operation stays in the recording pause mode.

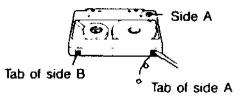
To resume recording, press ▯▯.

To make blank spaces that are longer than four seconds
During recording, keep REC/REC MUTE pressed for as long as you want to make a blank.
After 4 seconds, the pause indicator flashes rapidly. When you release REC/REC MUTE, the indicator lights up and the tape operation stays in pause.

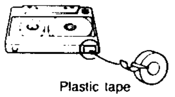
To resume recording, press ▯▯ .

The portion to be eliminated can be monitored through the speakers or headphones without being recorded.

To prevent accidental erasure

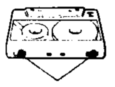


Break off the cassette tab of side A or B as illustrated.



To reuse a cassette for recording, cover the broken tab slot.

Note
Take care not to cover the detector slots of the TYPE II (CrO2) Cassettes. If the slots are covered, the automatic tape selection system will not operate correctly.

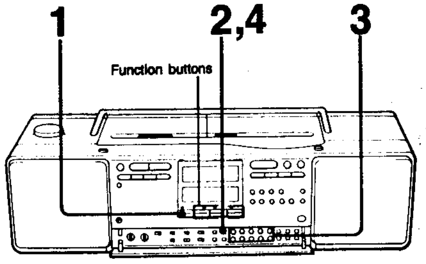


Using the Built-in Timer

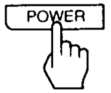
To Set the Timer-on Time

Only the starting time can be preset.
The power turns itself off automatically after two hours.

Make sure the STANDBY indication does not appear in the display window.

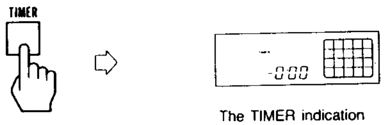


1 **Press POWER to turn off the power.**



The lamps in the function buttons go off.

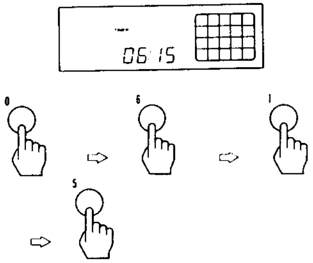
2 **Press.**



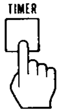
The TIMER indication appears in the display window.

3 **Press the number buttons inside the panel to program the starting time.**

Example: To set to 6:15



4 **Press.**



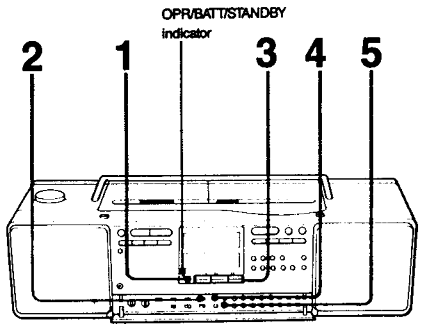
The timer-on time is memorized and the current time appears in the display window.

If the timer is preset by mistake
Repeat steps from the beginning. The previous preset goes off.

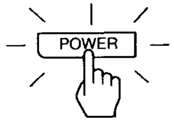
To check the preset time
Press TIMER in the TIMER STANDBY mode, and the preset time will appear.

To Listen to the Sound at the Time Desired

The back light in the display window does not light up.
Check to see that the clock shows the current time. If it does not, see page 12.

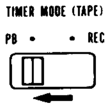


1 **Press.**

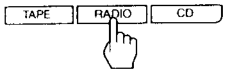


The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

2 **Set to PB.**



3 **Select the sound source desired.**

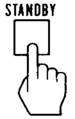


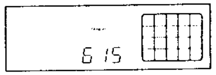
	Function button	Preparation
To listen to a tape	TAPE	Insert a tape into the deck.
To listen to a radio	RADIO	Select the band and tune in the desired station.
To listen to a disc	CD	Insert a disc into the disc holder.

4 **Set the timer.**

See above.

5 **Press.**





The STANDBY indication appears in the display window.

At the preset time
The sound will come on automatically at the preset time, and will turn off automatically after two hours have elapsed.

To release the timer mode
Press STANDBY again. The STANDBY indication will disappear from the display window.

To listen to the sound source desired at the same time on another day
It is not necessary to set the timer again since the preset time is memorized until you reset the timer. Repeat steps 2, 3 and 5 in "To Listen to the Sound at the Time Desired". If the STANDBY indication does not appear in the display window, press the STANDBY button again.

Clock system

0:00 = midnight
12:00 = noon

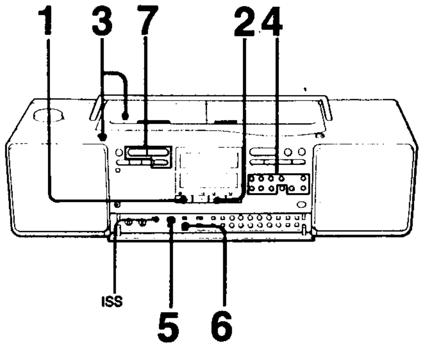
To listen to the disc in various playing modes at the time desired

1 Press POWER to turn on the power.
2 Press CD of the function buttons.
3 Make sure that the disc player is in the stop mode and select the playing mode desired from REPEAT 1/ALL, SHUFFLE and PROGRAM. (See page 18.)
4 Set the timer.
5 *Press STANDBY.*

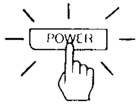
The playing will start automatically at the preset time.

Recording Radio Sound

Make sure the STANDBY indication does not appear in the display window.

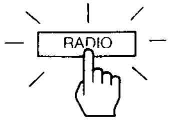


1 Press.

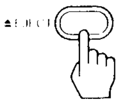


The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

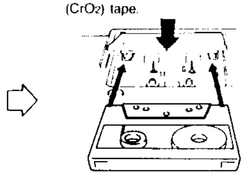
2 Press.



3 Press.



Use TYPE I (normal) or TYPE II (CrO2) tape.

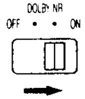


Push to close the holder

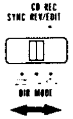
4 **Select the band and tune in the station desired.**

See page 23.

5 **Set to ON when you record using the DOLBY B Noise Reduction system.**



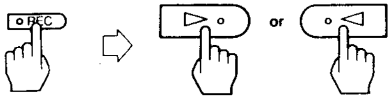
6 **Select the tape transport direction.**



	CD REC/DIR MODE selector
To record on both sides of a cassette	Set ⥂ or ⥃.
To record on one side of a cassette	Set to ⇄.

Both-sides-recording should be started from the front side.

7 **While keeping REC/REC MUTE pressed, press (to record from the front side) or (to record from the reverse side).**



To stop recording
Press [ ].

After recording
Press POWER again.

The settings of VOLUME, BASS and TREBLE will not affect the recording level.

Notes

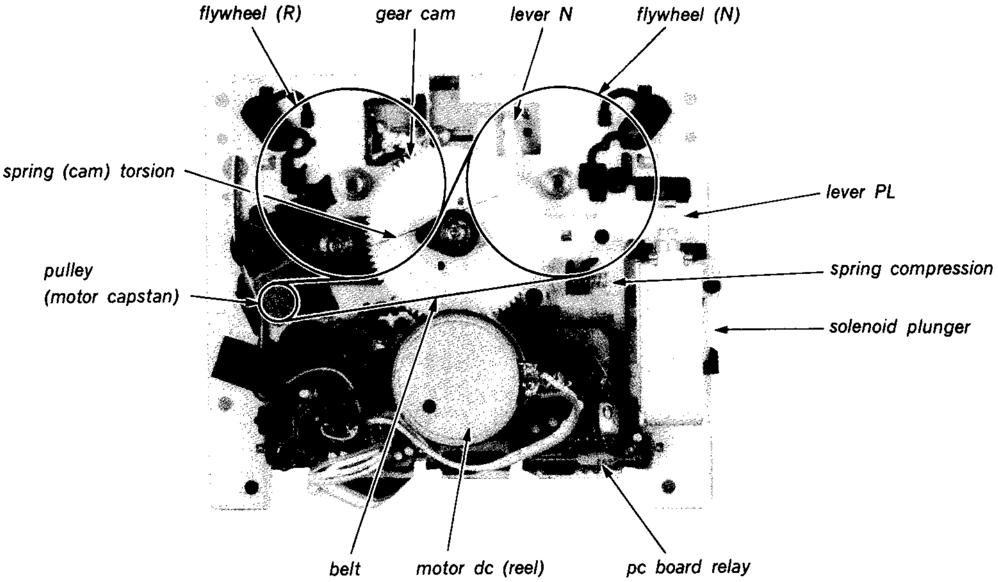
- If the unit is operated on the internal batteries while recording, the power might be turned off if the batteries are too weak. For recordings, operating the unit on house current is recommended.
- If you use the remote commander supplied near the unit while listening an AM program, noises might be heard.

To reduce noise while recording an AM program
If a whistling noise is heard, which was inaudible before the REC/REC MUTE button is pressed, set the ISS switch inside the panel to 1, 2 or 3, depending on which one best reduces the noise. Normally, set the switch to 2.

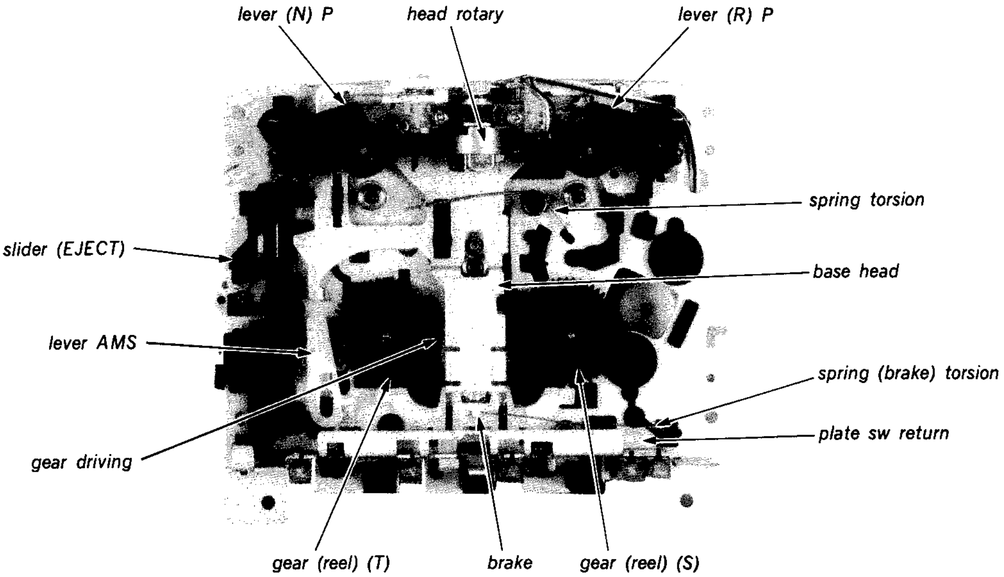
SECTION 2
MECHANICAL OPERATION

Modes are changed by that "Solenoid plunger" triggers "gear cam" to rotate in synchronizing with flywheel (N). Main mechanical part names are shown in the followings precedently to mechanism operation.

- MOTOR

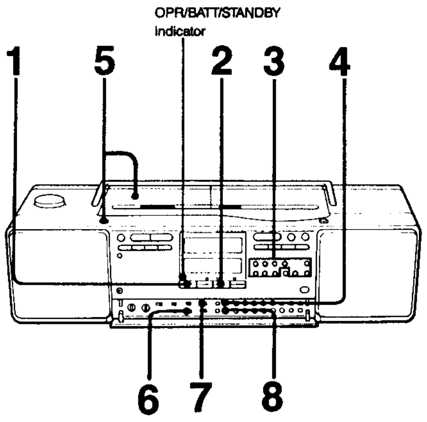

flywheel (R)
gear cam
lever N
flywheel (N)
spring (cam) torsion
lever PL
pulley
(motor capstan)
spring compression
solenoid plunger
belt
motor dc (reel)
pc board relay

- CASSETTE

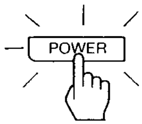

lever (N) P
head rotary
lever (R) P
spring torsion
slider (EJECT)
base head
lever AMS
spring (brake) torsion
plate sw return
gear driving
gear (reel) (T)
brake
gear (reel) (S)

To Record the Radio Sound at the Time Desired The back light in the display window does not light up.

Check to see that the clock shows the current time. If it does not, see page 12.

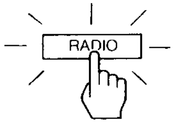


1 Press.



The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries.
(The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

2 Press.



3 **Select the band and tune in the station desired.**

See page 23.

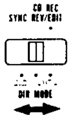
4 **Set the timer for recording.**

See page 34.

5 **Insert a cassette into the deck.**

Use TYPE I (normal) or TYPE II (CrO2) tape.

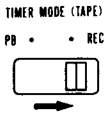
6 **Select the tape transport direction.**



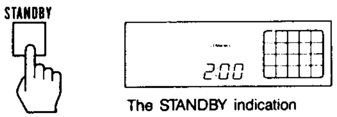
	CD REC/DIR MODE selector
To record on both sides of a cassette	Set to ⮐ or ⟲.
To record on one side of a cassette	Set to ⇄.

Both-sides-recording should be started from the front side.

7 **Set to REC.**



8 **Press.**



The STANDBY indication appears in the display window.

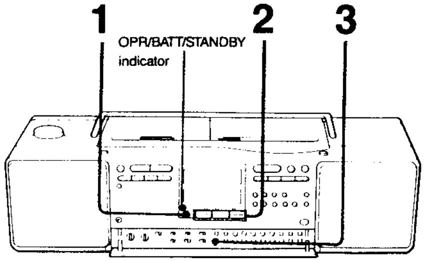
To release the timer mode
Press STANDBY.

At the preset time
The recording will start automatically at the preset time and will turn off automatically after two hours. If a cassette of less than 120 minutes is used, the recording will finish when the tape reaches the end.

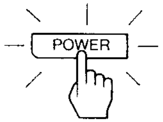
Note
The recording with the timer starts from the front side of the tape. If the cassette tab on the front side has been broken, the recording cannot be made. Be sure the tab on the front side has not been broken. If it has been broken make sure that the tab slot is covered.

To Fall Asleep with the Sound Desired—Sleep Function The back light in the display window does not light up.

You can turn the unit on or off with the SLEEP button.

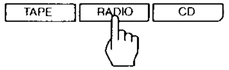


1 Press.



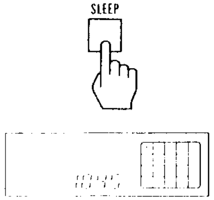
The OPR/BATT/STANDBY indicator lights up when you use the unit with batteries. (The OPR/BATT/STANDBY indicator always lights up when the AC power cord is connected to the unit.)

2 **Select the sound source desired and start playing.**



	Function button	Preparation
To listen to a tape	TAPE	Insert a tape into the deck and press or
To listen to a radio	RADIO	Select the band and tune in the desired station.
To listen to a disc	CD	Insert a disc into the disc holder and press

3 **Press to start the sleep function.**

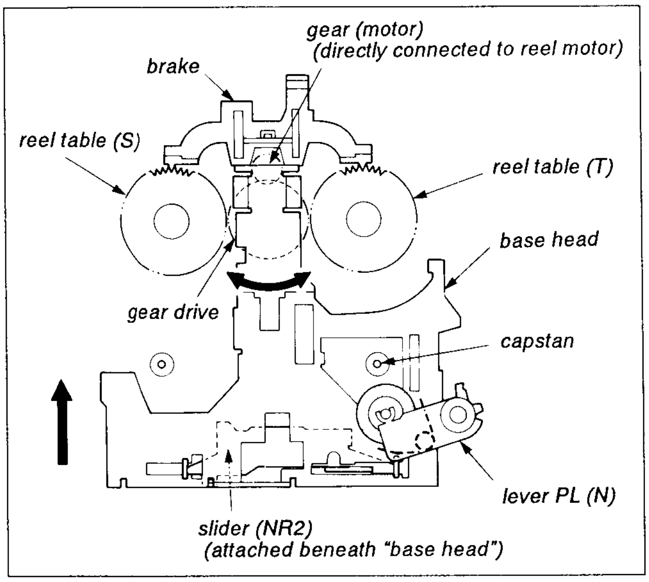


The sound source will turn itself off after 60 minutes.

To release the sleep function before 60 minutes have elapsed
Press SLEEP again or POWER to turn the power off.

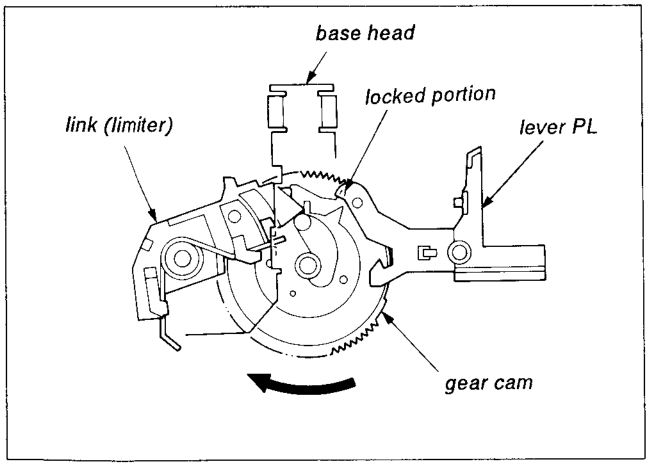
You can fall asleep with the sound desired and you will be awakened by the same program at the preset time.
1 Follow the steps as describe in "To Fall Asleep with the Sound Desired".
2 Follow the steps as described in "To Listen to the Sound at the Time Desired".

(3) "Base head" is moved foward and the break is detached from the reel table. "Motor dc (reel)" is driven counterclockwise and the reel table (T) is turned by "gear driveng". "Lever PL" is pressed to the capstan.

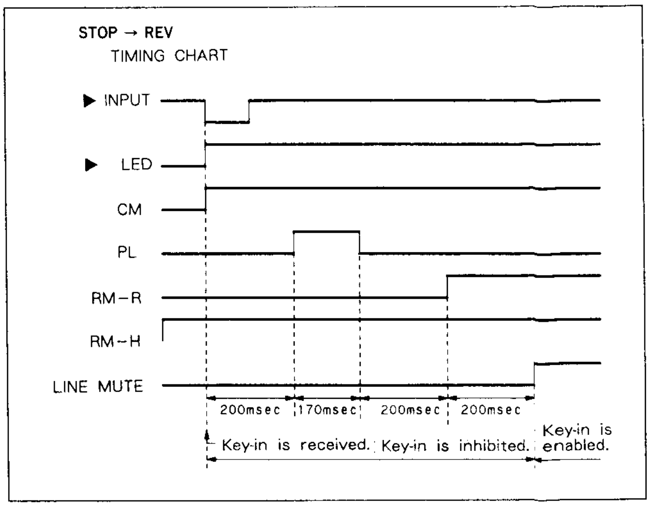

gear (motor)
(directly connected to reel motor)
brake
reel table (S)
reel table (T)
base head
gear drive
capstan
lever PL (N)
slider (NR2)
(attached beneath "base head")

(4) "Base head" is moved forward by "spring torsion" of link (limiter) in synchronizing with rotating of "gear cam". "Gear came" is turned and is locked by "lever PL".

(5) FWD mode switching is completed.


base head
locked portion
link (limiter)
lever PL
gear cam

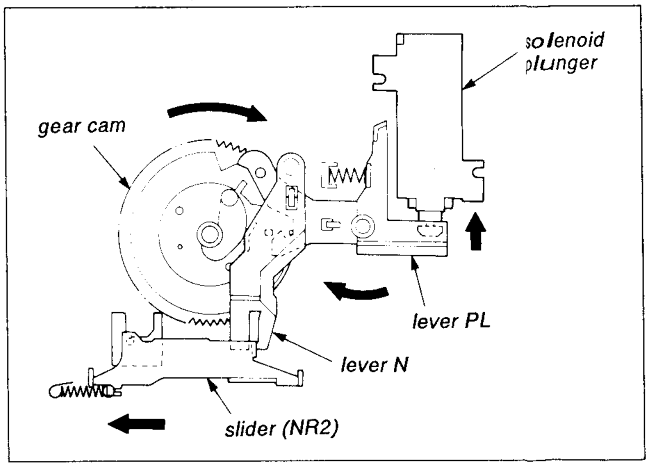
2-3. REV mode



Differences from FWD mode

Suction time of "solenoid plunger" is long, "lever N" is not locked by "lever PL", and a head is set to REV mode. The slider (NR2) is set to REV mode and "level PL (R)" is pressed to a capstan. "Lever N" is turned by "gear cam". However, "lever PL" is not locked and is set back to previous position because "lever PL" is sucked by "solenoid plunger".
"Motor reel" is driven clockwise in REV mode.

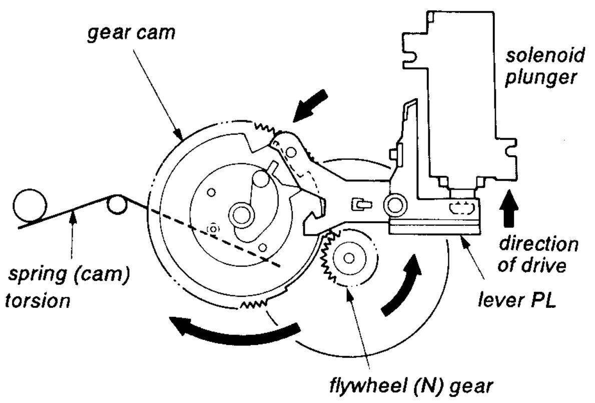
Perspective viewed from cassette


solenoid
plunger
gear cam
lever PL
lever N
slider (NR2)

Operations of the modes are as follows:

2-1. Operation of the cam gear

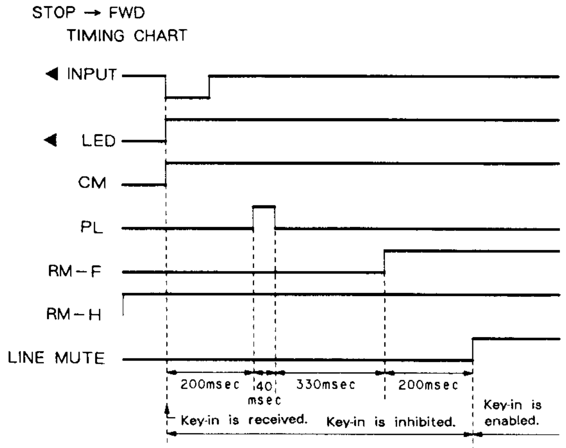
Perspective viewed from cassette


gear cam
solenoid plunger
spring (cam) torsion
direction of drive
lever PL
flywheel (N) gear

Operations are performed as follows;

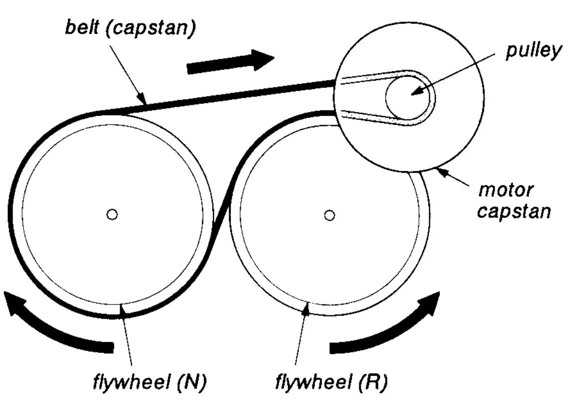
1. Power is supplied to "solenoid plunger".
2. "Lever PL" moves in the direction of arrow.
3. "Gear cam" is turned by "spring (cam) torsion".
4. "Gear cam" is aligned with "flywheel (N) gear" so that "gear cam" is turned.
   (Approx. 0.5 seconds/1 turn)

2-2. FWD mode



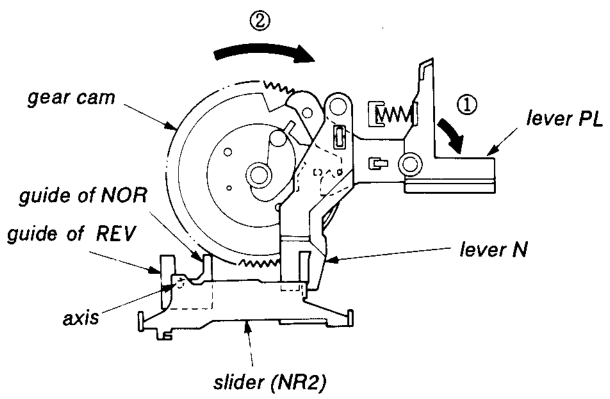
- *CM* ······· *motor capstan ON/OFF signal*
  PL ········ *plunger ON/OFF signal*
  RM ······· *reel motor ON/OFF signal*
  －F : FWD direction
  －R : REV direction
  RM-H ···· *reel motor drive voltage switching signal*
  －H : NOR
  －L : High

(1) Power is supplied to "motor capstan" and "flywheel" is turned by "belt (capstan)".


belt (capstan)
pulley
motor capstan
flywheel (N)
flywheel (R)

(2) Power is supplied to "solenoid plunger", "gear cam" is turned, a head is switched to NOR mode, and a head base is moved forward.

Perspective viewed from cassette


②
①
gear cam
lever PL
guide of NOR
guide of REV
lever N
axis
slider (NR2)

"Lever N" is turnd counterclockwise by "gear cam" and is locked at "level PL".

Rotation (counterclockwise) of "lever N" is synchronized with sliding of "slider (NR2)". When "slider (NR2)" is slid rightward, mode of a head is switched from REV to NOR. Simultaneously "lever PL" is pressed to a capstan.

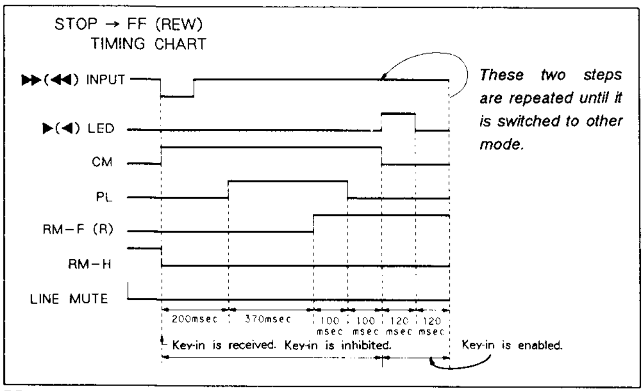
SECTION 3
PIN DESCRIPTION

3-1. PIN DESCRIPTION

- IC401 M50720-147SP

Pin No.	Name	I/O	Pin Description
1	STAN-IN	I	Indicates STANBY setting. (active : H)
2	SLEEP-IN	I	SLEEP ON input terminal. (active : H)
3	TIMER-IN	I	TIMER ON input terminal. (active : H)
4	X-OUT	O	System clock input. (ceramic oscillator, 500kHz)
5	X-IN	I	
6	CE	I	Input for recovering from BUM (Back Up Mode).
7	RESET	I	System reset input terminal.
8	VDD	—	Power supply voltage
9	CNTR	—	(Not used)
10	INT	I	BUM/SUM (Set Up Mode) switching input.
11	C	—	Recovery wait time setting.
12	MUTE	O	MUTE ON
13	O•S	O	L pulse output to INT.
14	S/T•C	O	Forces timer off.
15	R•TRIG	O	Radio DATA transfer enable.
16	R•DATA 1	O	4-bit parallel DATA output.
17	R•DATA 2	O	
18	R•DATA 3	O	
19	R•DATA 4	O	
20, 21	GND	—	Ground terminals
22	SOURCE S 1 (TAPE)	O	Function select output terminals.
23	SOURCE S 2 (RADIO)	O	
24	SOURCE S 3 (CD)	O	
25	SOURCE S 4 (LINE)	O	
26	MD-DATA 1	O	3-bit parallel DATA output terminals for MD operation.
27	MD-DATA 2	O	
28	MD-DATA 3	O	
29	REC	O	MD REC operating signal output terminal.
30	A/B•SEL	O	A/B DECK switching output terminal.
31	FWD/REV•SEL	I	FWD/REV memory input terminal.
32	MD•TRIG	O	
33	NC	—	
34	VOL•UP	O	VOL control output terminals.
35	VOL•DOWN	O	
36	RMC	I	Remote control input terminal.
37	POWER O/F	I	POWER ON/OFF control terminal.
38	FUN•TAPE	I	Function Tape select terminal.
39	FUN•RADIO	I	Function Radio select terminal.
40	FUN•CD	I	Function CD select terminal.
41	FUN•LINE	I	Function LINE IN select terminal.
42	TIMER•SEL	I	TIMER PB/REC select terminal.

2-4. FF (REW) mode



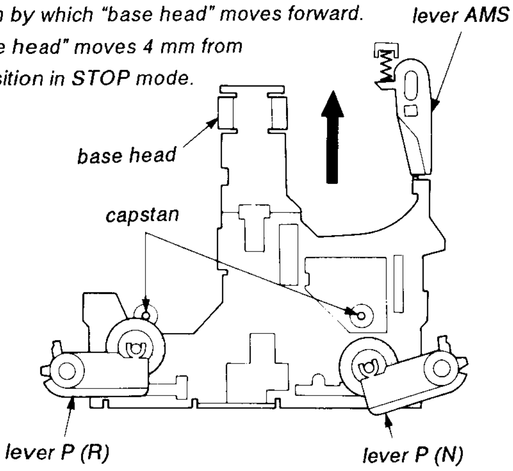
Mechanism operation (same operation for both FF and REW modes)

The head base is locked at a set position by the AMS lever synchronized with "solenoid plunger".

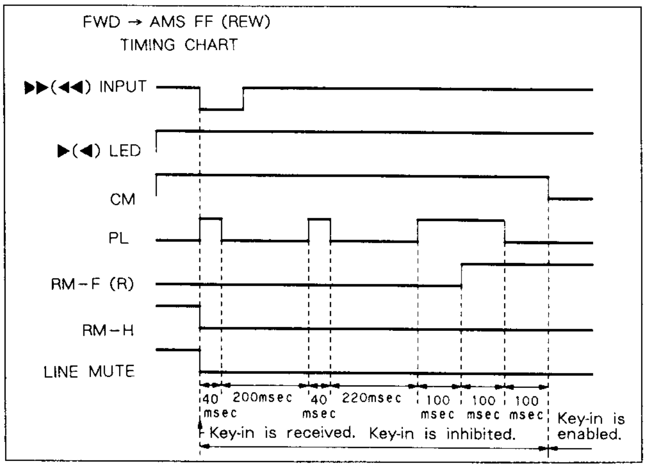
"Motor capstan" is turned off after "base head" is locked.

Voltage of "motor reel" in FF or REW mode is 6 V.

- *Direction of head is REV.*
- *Direction of turning of "motor reel".*
  FF : Counterclockwise
  REW : Clockwise
- *Length by which "base head" moves forward.*
  "Base head" moves 4 mm from a position in STOP mode.



2-5. FWD AMS mode



Mechanism operation

It is changed from FWD mode to STOP mode, "lever AMS" is stopped in midway of that "base head" is moved forward as machnism operation of FWD mode, and it is set to FWD, AMS, and FF/REW modes. A position of "Base head" is the same as in FF/REW mode (advanced by 4 mm than STOP mode).

Difference from FF/REW mode is a ruming direction of " motor reel".

2-6. REV AMS (REW/FF) mode

Timing chart

STOP → REV → AMS•REW/FF

- All the signals in REV AMS mode is the same as those of REW mode except that a LED blinks or lights on.

Mechanism operation

It is changed from REV mode to STOP mode, "lever AMS" is stopped in midway of that "base head" is moved forward as mechanism operation of REV mode, and it is set to REV, AMS, and REW/FF modes.

A position of "Base head" is the same as in FF/REW mode (advanced by 4 mm than STOP mode).

Difference from FF/REW mode is a ruming direction of " motor reel".

Pin No.	Name	I/O	Pin Description
63	XRST	O	Terminals used as 4-bit output-only port (the inverter and pull-up resistor of the output format are programmable) and for LCD segment signal output.
64	12/24		
65	MD STOP		
66	HI SPEED ERASE		
67	PEN	O	Terminals used as 4-bit output-only port (output format same as port C) and for LCD segment signal output.
68	LATCH (FADER)		
69	POWER ON		
70	SLEEP ON		
71	VSS	—	GND terminal
72	TX	O	Clock generator circuit output.
73	NC	—	(Not used)
74	TEX	I	32kHz timer clock generator circuit input terminal. Connect a 32.768kHz quartz oscillating element between TEX and TX. To use as an event clock input, connect the clock oscillator source to the TEX terminal and leave the TX terminal open.
75	VREF	I	Reference voltage input for power supply voltage reset circuit. Normally connected to a zener diode.
76—79	PORT H/ SEGMENT	O	Terminals used as 4-bit output-only port (output format same as port C) and for LCD segment signal output (bit-level designation supported).
80	PORT G/ SEGMENT	O	Terminal used as 4-bit output-only port (output format same as port C) and for LCD segment signal output.

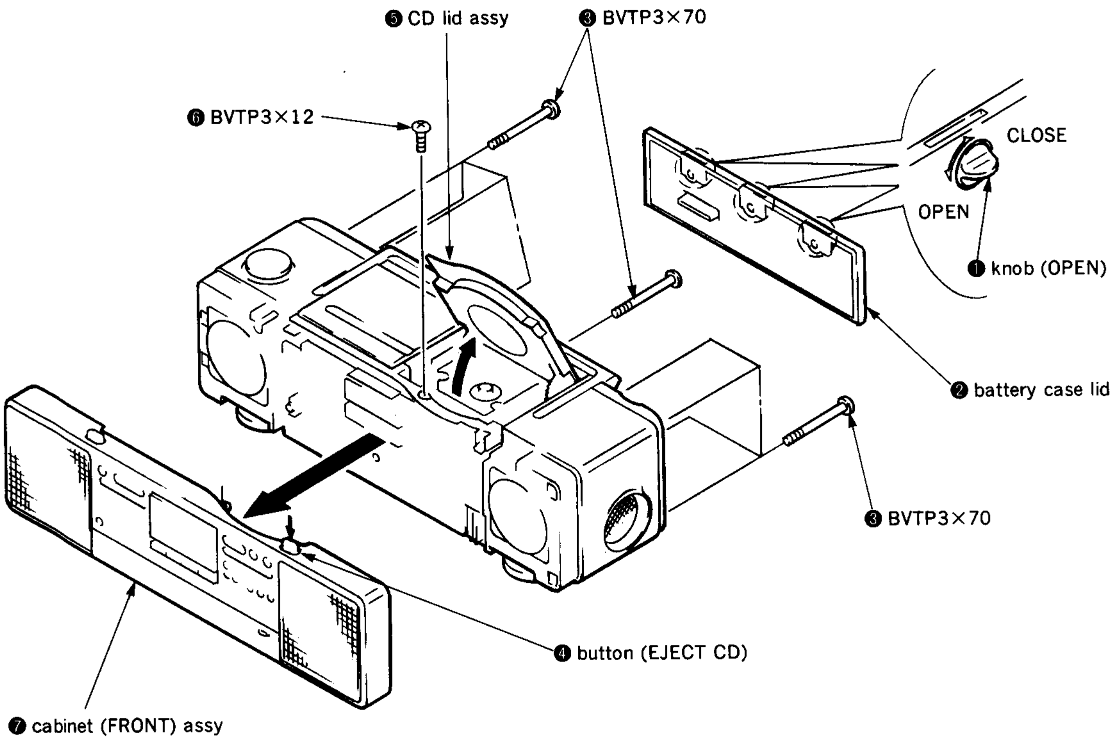
- IC801 CXP5078-057Q

Pin No.	Name	I/O	Pin Description
1—3	PORT G/ SEGMENT	O	Terminals used as 4-bit output-only port (output format same as port C) and for LCD segment signal output.
4—19	SEGMENT	O	LCD segment signal output terminals.
20—23	COMMON	O	LCD common signal output terminals.
24—26	VLC 1—VLC 3	—	LCD bias power supply terminals.
27	VL	O	Control terminal for cutting off current flow to external LCD bias resistor during standby status.
28	RMIN	I	Remote control receiver circuit input terminal.
29	INT (SCOR)	I	Interrupt input terminal. Allows selection of edge mode or level mode through programming.
30	XTAL	O	Clock generator circuit output.
31	EXTAL	I	Clock generator circuit input terminal. A quartz oscillating element or ceramic resonator is connected between EXTAL and XTAL. To use external clock input, connect the clock oscillator source to the EXTAL terminal and leave the XTAL terminal open.
32	RST	I/O	Output of internal power-on reset circuit. When inputting an external reset signal, it should be maintain at "L" (0V) for at least two command cycles.
33	NC	—	(Not used)
34	VDD	—	Positive power supply terminal.
35—38	PORT I/ ANALOG VOLTAGE INPUT	I/O	This 4-bit I/O port has the same functions as port C. Also used for A/D converter input.
39, 40	PORT E	I/O	This 4-bit I/O port has the same functions as port A. Also used for A/D converter input.
41	CD		
42	STANDBY		
43	NC	—	(Not used)
44	SQCK	I/O	Used as both shift clock I/O terminal for serial I/O and as bit "0" (input) for port X.
45	DATA	I/O	Used as both serial data I/O terminal for serial I/O and as bit "1" (input) for port X. (Can be programmed to prohibit SO output.)
46	SUBQ	I	Used as both serial interface (8-bit) input terminal and as bit "2" (input) for port X.
47	XLT	I/O	This 4-bit I/O port allows individual bits to be programmed as input or output. The output format has three states and the pull-up resistor can be programmed. Can also be used as a standby cancel terminal.
48	BTL MUTE		
49	DRIC		
50	EJECT		
51	LEADER	I/O	This 4-bit I/O port has the same functions as port C.
52	REVERSE		
53	PAUSE LED		
54	REC		
55	GFS	I/O	This 4-bit I/O port can be programmed as either input or output. The output format has three states and the pull-up resistor can be programmed.
56	FOK		
57	SENSE		
58	HI SPEED		
59	MUTE	O	Port Y bit "0" output terminal.
60	BW	O	Terminal used as both PWM generator (14-bit) output and port Y bit "1" (output).
61	WUP	I	Terminal used for both wake-up input to cancel standby status and port Y bit "2" (input).
62	RWR OFF	I	Used as both event counter (8-bit) input terminal and port Y bit "3" (input).

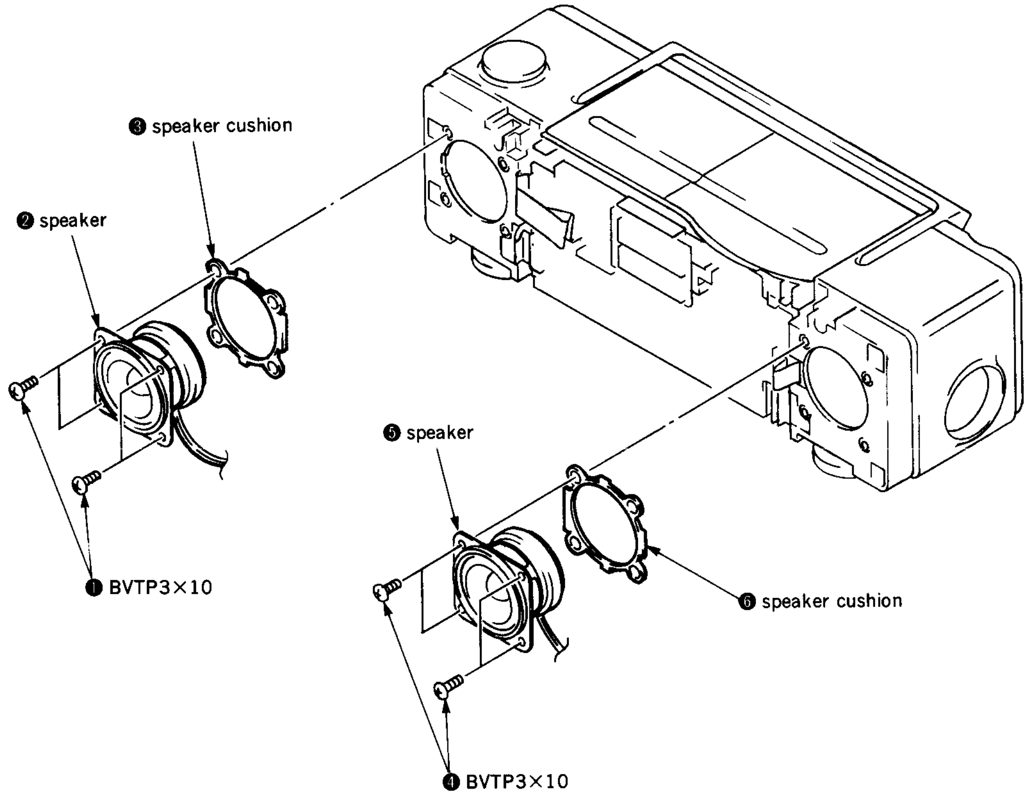
SECTION 4
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

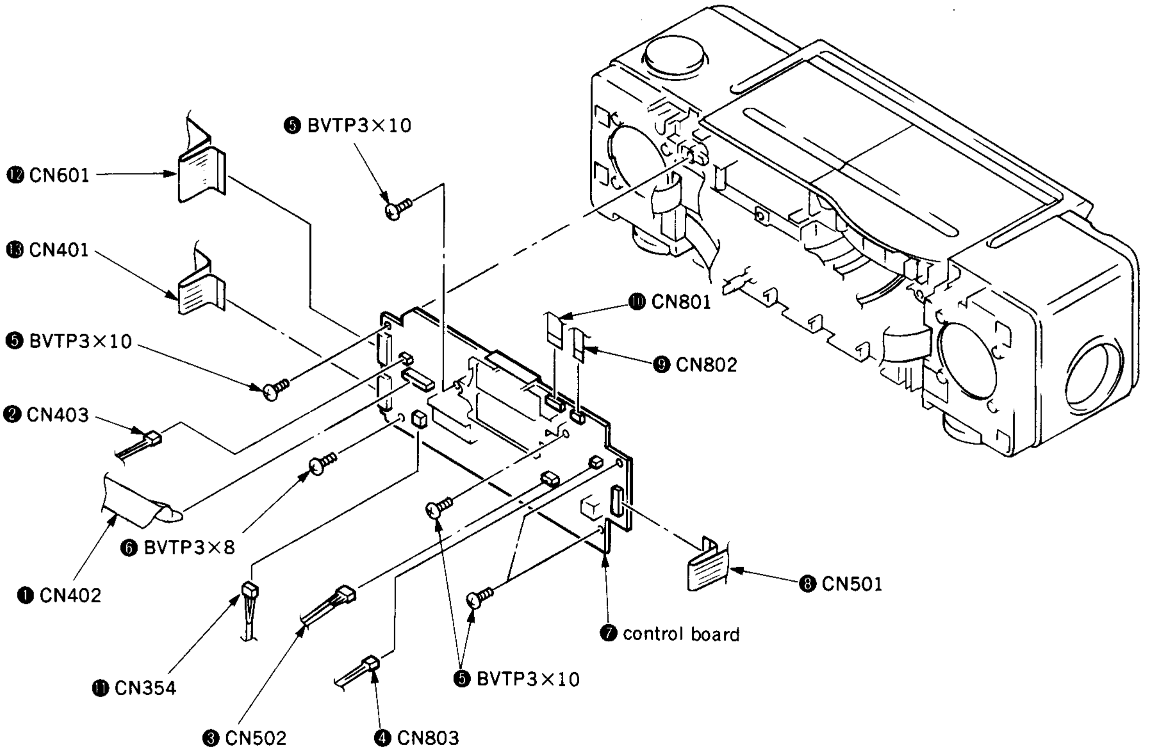
4-1. CABINET (FRONT) ASSY


❺ CD lid assy
❸ BVTP3×70
❻ BVTP3×12
CLOSE
OPEN
❶ knob (OPEN)
❷ battery case lid
❸ BVTP3×70
❹ button (EJECT CD)
❼ cabinet (FRONT) assy

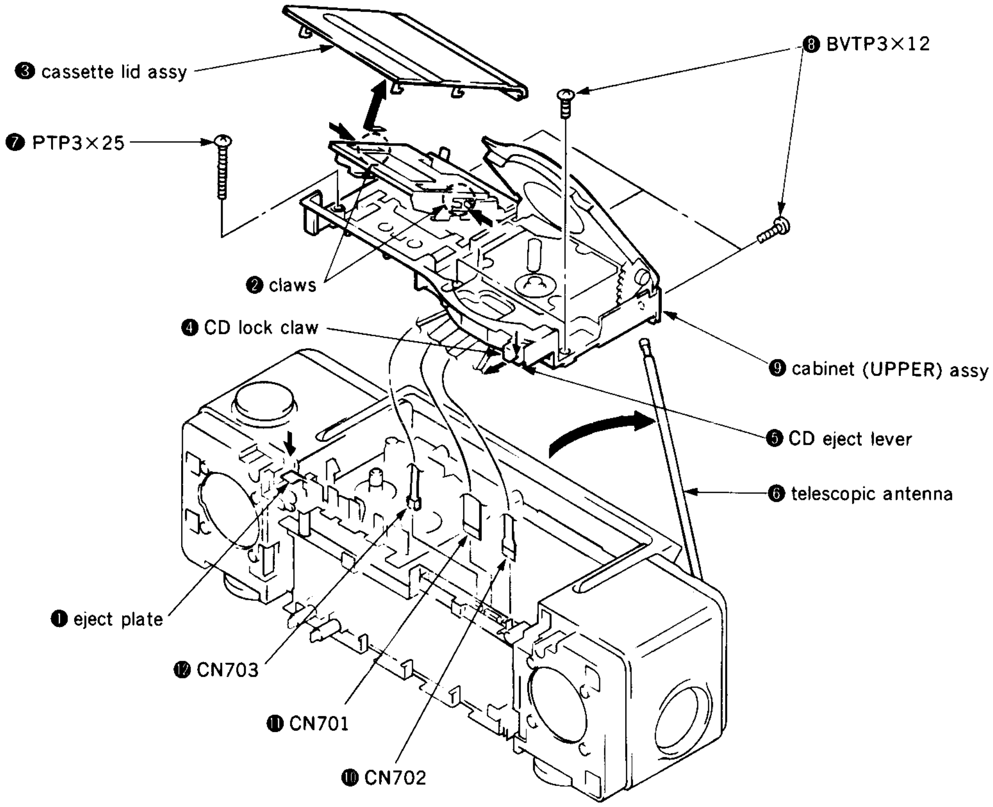
4-2. SPEAKER


❸ speaker cushion
❷ speaker
❺ speaker
❶ BVTP3×10
❻ speaker cushion
❹ BVTP3×10

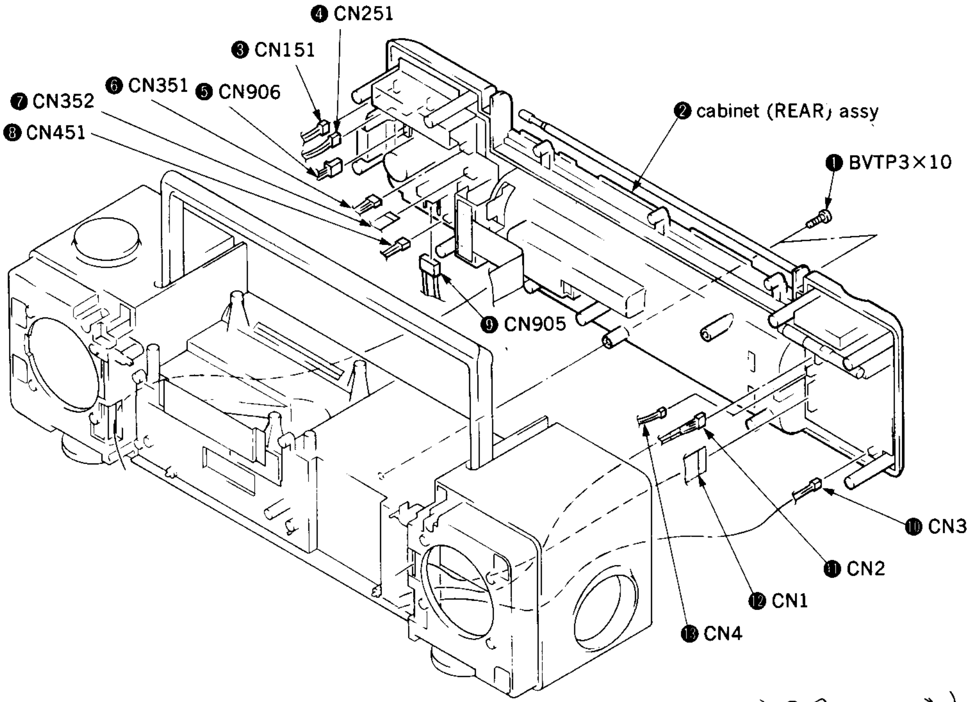
4-3. CONTROL BOARD


⓬ CN601
❺ BVTP3×10
⓭ CN401
❺ BVTP3×10
❷ CN403
❶ CN402
❻ BVTP3×8
❿ CN801
❾ CN802
❽ CN501
❼ control board
⓫ CN354
❺ BVTP3×10
❸ CN502
❹ CN803

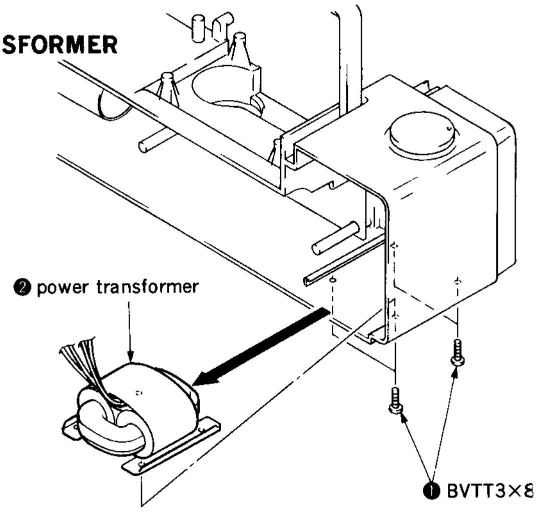
4-4. CABINET (UPPER) ASSY


❸ cassette lid assy
❼ PTP3×25
❽ BVTP3×12
❷ claws
❹ CD lock claw
❾ cabinet (UPPER) assy
❺ CD eject lever
❻ telescopic antenna
❶ eject plate
⓬ CN703
⓫ CN701
❿ CN702

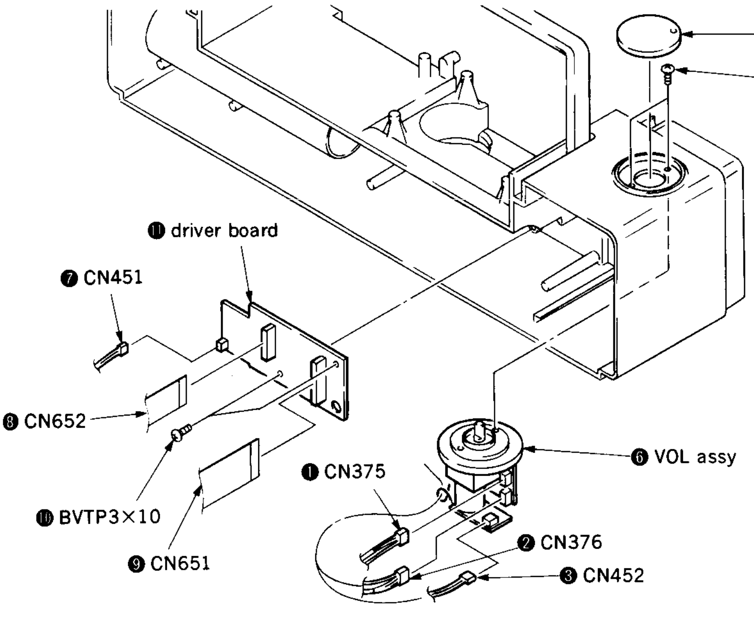
4-7. CABINET (REAR) ASSY


④ CN251
③ CN151
⑥ CN351
⑤ CN906
⑦ CN352
⑧ CN451
② cabinet (REAR) assy
① BVTP3×10
⑨ CN905
⑩ CN3
⑪ CN2
⑫ CN1
⑬ CN4

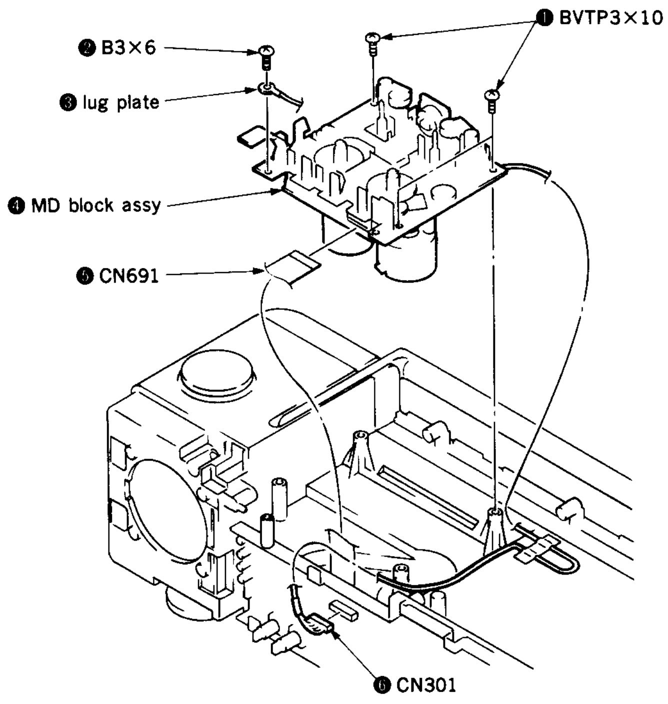
4-8. POWER TRANSFORMER


② power transformer
① BVTT3×8

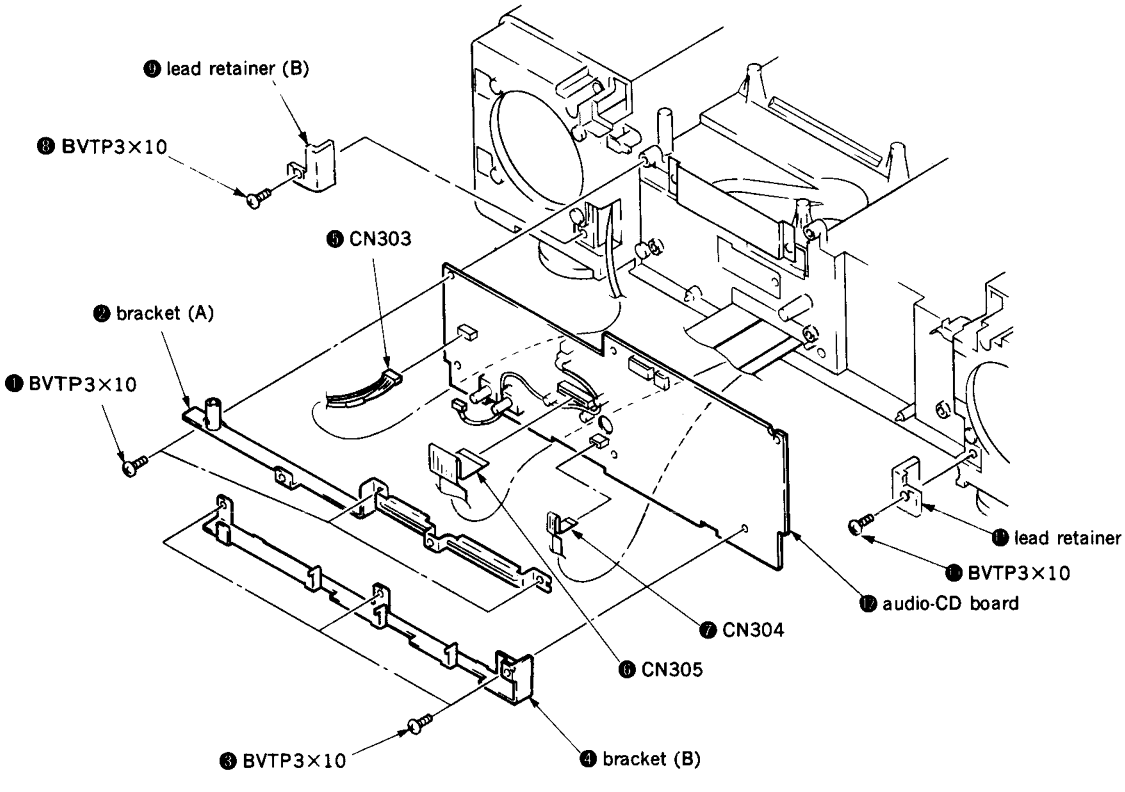
4-9. VOL ASSY, DRIVER BOARD


④ knob (VOL)
⑤ BVTP3×10
⑪ driver board
⑦ CN451
⑧ CN652
⑥ VOL assy
① CN375
⑩ BVTP3×10
② CN376
⑨ CN651
③ CN452

4-5. MD BLOCK ASSY


❶ BVTP3×10
❷ B3×6
❸ lug plate
❹ MD block assy
❺ CN691
❻ CN301

4-6. AUDIO-CD BOARD


❾ lead retainer (B)
❽ BVTP3×10
❺ CN303
❷ bracket (A)
❶ BVTP3×10
⓫ lead retainer
❿ BVTP3×10
⓬ audio-CD board
❼ CN304
❻ CN305
❸ BVTP3×10
❹ bracket (B)

SECTION 6
ELECTRICAL ADJUSTMENTS

DECK SECTION

1. Perform the adjustments in the order that they are described below. (It is expected that after the playback system has been adjusted, the recording system is then adjusted.)
2. Unless otherwise specified, perform the adjustment and measurement for each channel.

- Positions of the switches and controls

FUNCTION ....TAPE
ISS 2
DIR MODE ....⇄
VOLUME......................standard output level position

- Specified position of recording

Adjust the VOLUME control so that the following output signal level is obtained.

- Standard output level

Output terminal	**DOLBY OUT**
Signal source impedance	without load
output signal level	0.180V (−12.7dB)

0dB=0.775V

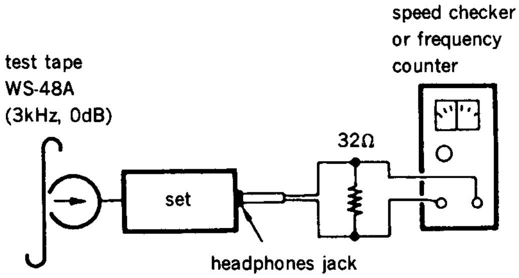
- Test tape

Type	**Signal**	**Used for**
WS-48A	3kHz, 0dB	tape speed adjustment
P-4-A100	10kHz, −10dB	record/playback head azimuth and phase adjustment
P-4-L300	315Hz, 0dB	playback level adjustment
CS-122	——	record bias adjustment, record level adjustment

Tape Speed Adjustment

Procedure :

1. Mode : playback



- First, perform the high speed adjustment.

(High speed adjustment)

2. Place the CD DUB SPEED (S407) in the "HIGH" position.

Adjustment value : high speed

Adjustment point	**Speed cheker reading**	**Frequency counter reading**
RV602	−1.17 to −0.83%	5,930 to 5,950Hz

3. Adjust so that the difference in frequency from the REV side is within 1% (60Hz).

(Normal speed adjustment)

4. Place the CD DUB SPEED (S407) in the "NORMAL" position.

Adjustment value : normal speed

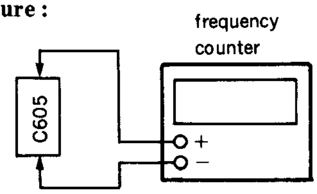
Adjustment part	**Speed cheker reading**	**Frequency counter reading**
RV601	−1 to +1%	2,970 to 3,030Hz

5. Adjust so that the difference in frequency from the REV side is within 1% (30Hz).

Adjustment Location : control board (See page 34.)

System Control Clock Adjustment

Procedure :



Connect a frequency counter across the C605 and verify that the readout is at 6.4kHz±40Hz. If it is outside the range, adjust RV603.

Adjustment Location : control board (See page 34.)

SECTION 5
MECHANICAL ADJUSTMENTS

DECK SECTION

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback/erase head	pinch roller
idlers	rubber belts
capstan	

2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
6. Power supply voltage: 12V dc.

Torque Measurement

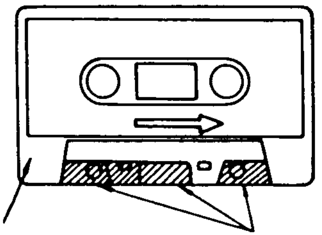
Mode	Torque meter	Meter reading
Forward	CQ-102C	22.5−50g•cm (0.31−0.69 oz•inch)
Forward back tension	CQ-102C	1.5−5.0g•cm (0.02−0.07 oz•inch)
Reverse	CQ-102RC	22.5−50g•cm (0.31−0.69 oz•inch)
Reverse back tension	CQ-102RC	1.5−5.0g•cm (0.02−0.07 oz•inch)
Fast Forward and Rewind	CQ-201B	140−180 g•cm (1.94−2.50 oz•inch)

Tape Tension Measurement

Mode	Tension meter	Meter reading
Forward	CQ-403A	more than 100g (more than 3.53 oz)
Reverse	CQ-403R	

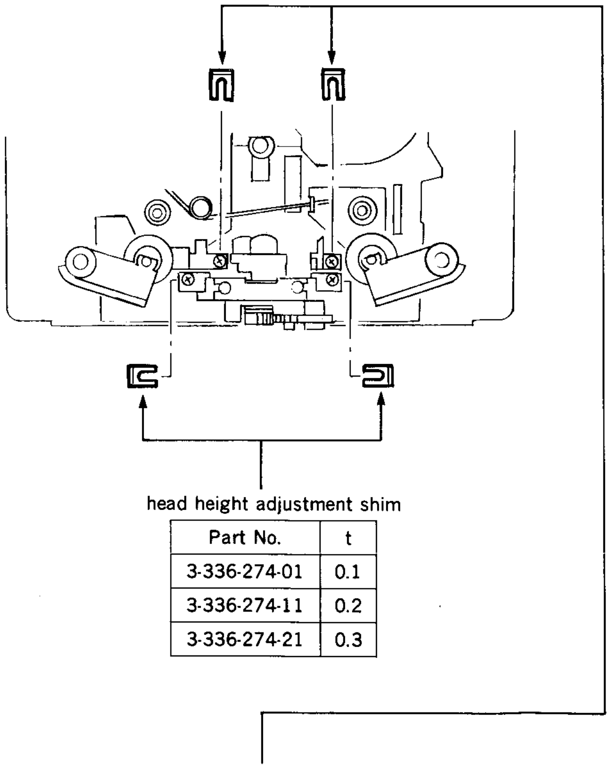
Head Height Adjustment

1. Use CQ-009C (Part No. 8-909-708-01) or prepare an adjustment cassette as shown below.



2. Place the set into the FWD playback mode. Loosen the FWD tape guide locking screw. Use appropriate head height adjustment shims and adjust the head height so that there is no tape curl or twist.
3. Place the set into the REV playback mode. Loosen the REV tape guide locking screw. Use appropriate head height adjustment shims and adjust the head height so that there is no tape curl or twist.
4. After adjustment, lock the tape guide locking screws.

Adjustment Location:



head height adjustment shim

Part No.	t
3-336-274-01	0.1
3-336-274-11	0.2
3-336-274-21	0.3

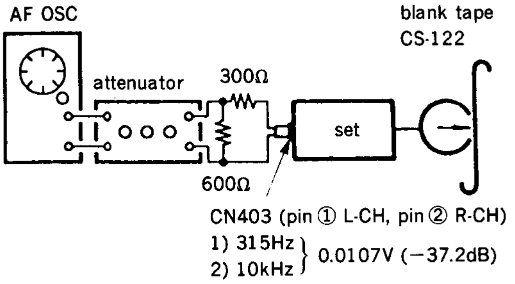
head height adjustment shim

Part No.	t
4-932-603-01	0.1
4-932-603-11	0.2

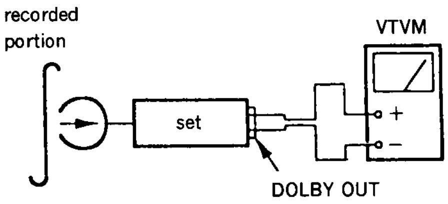
Record Bias Adjustment

Procedure :

1. Mode : FWD record


AF OSC
blank tape
CS-122
attenuator
300Ω
set
600Ω
CN403 (pin ① L-CH, pin ② R-CH)
1) 315Hz
2) 10kHz
0.0107V (−37.2dB)

2. Mode : FWD playback

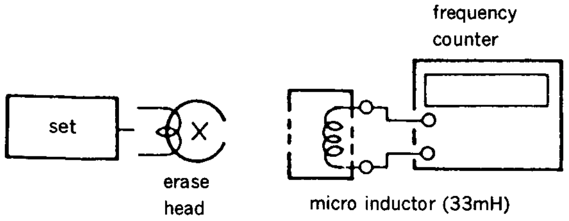

recorded
portion
VTVM
set
+
−
DOLBY OUT

3. Verify that the playback output of 10kHz, −37.2dB shows a difference within 0±0.5dB from the playback output of 315Hz, −37.2dB. If outside the specified range, adjust the RV103 (L-CH) and RV203 (R-CH) controls and repeat steps 1 and 2.
4. Also in the REV record mode, confirm that the requirement is met.

Adjustment Location : audio-CD board

Record Bias Frequency Adjustment

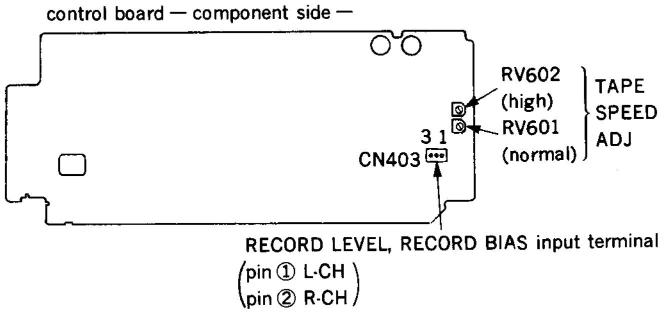
Procedure :

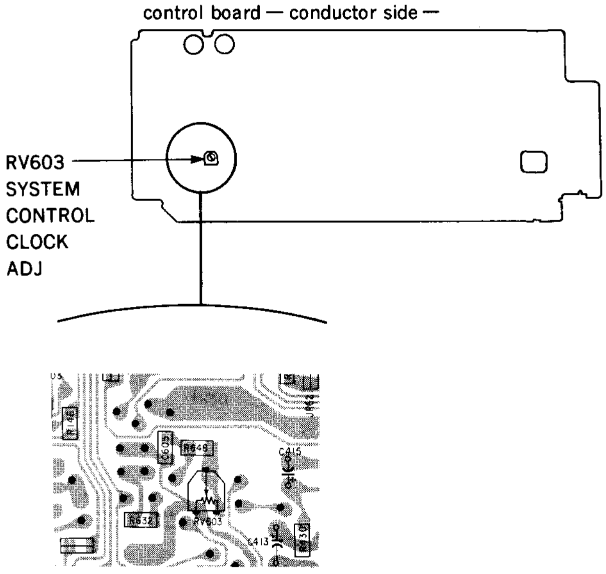

frequency
counter
set
erase
head
micro inductor (33mH)

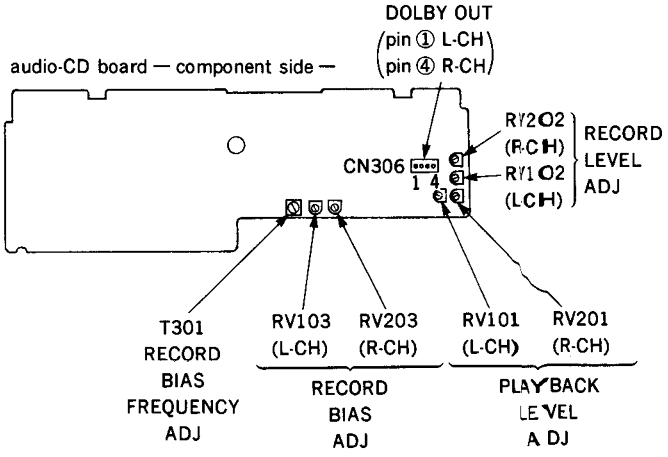
1. Non-signal recording mode.
2. Bring a micro inductor connected to a frequency counter close to the core section of the erase head.
3. Adjust T301 for at 107.5kHz±1kHz when the ISS switch is placed in the "2" position.

Adjustment Location : audio-CD board

Adjustment Location :


control board — component side —
RV602
(high)
RV601
(normal)
TAPE
SPEED
ADJ
3 1
CN403
RECORD LEVEL, RECORD BIAS input terminal
pin ① L-CH
pin ② R-CH

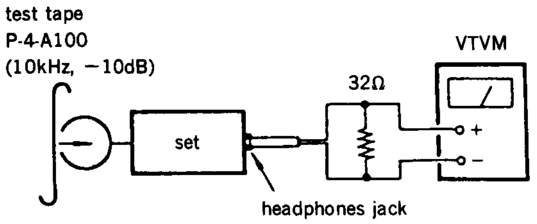

control board — conductor side —
RV603
SYSTEM
CONTROL
CLOCK
ADJ


DOLBY OUT
pin ① L-CH
pin ④ R-CH
audio-CD board — component side —
CN306
1 4
RV202
(R-CH)
RV102
(L-CH)
RECORD
LEVEL
ADJ
T301
RECORD
BIAS
FREQUENCY
ADJ
RV103
(L-CH)
RV203
(R-CH)
RECORD
BIAS
ADJ
RV101
(L-CH)
RV201
(R-CH)
PLAYBACK
LEVEL
ADJ

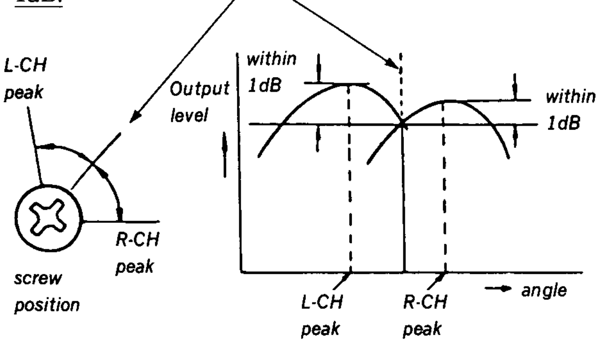
Record/Playback Head Azimuth and Phase Adjustment

Procedure :

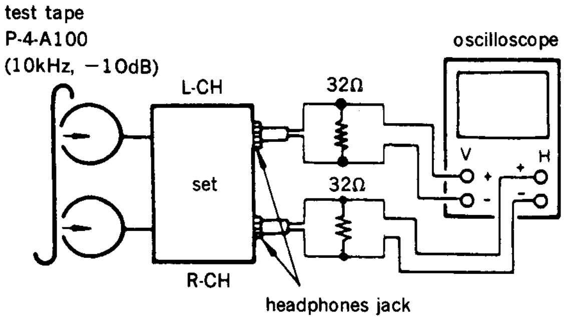
1. Mode : FWD/REV playback

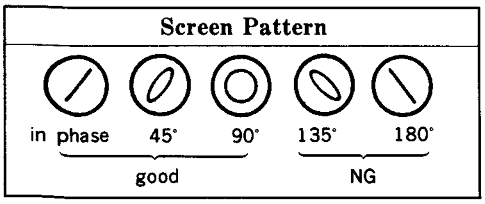

test tape
P-4-A100
(10kHz, −10dB)
VTVM
32Ω
set
+
−
headphones jack

2. Turn the adjustment screw for the maximum output leves. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

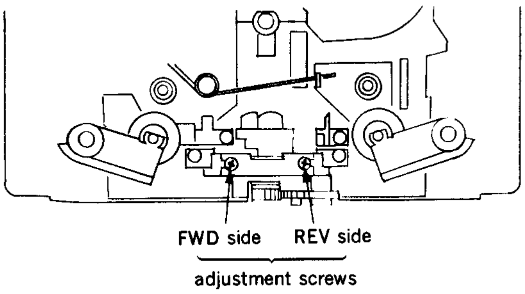

L-CH
peak
Output
level
within
1dB
within
1dB
R-CH
peak
screw
position
L-CH
peak
R-CH
peak
angle

3. Mode : REV playback


test tape
P-4-A100
(10kHz, −10dB)
oscilloscope
L-CH
32Ω
set
32Ω
V
H
+
+
−
−
R-CH
headphones jack


Screen Pattern
in phase
45°
90°
135°
180°
good
NG

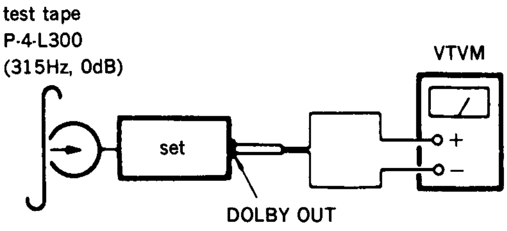
4. Change to the FWD playback mode and repeat steps 1 to 3.
5. After adjustment, lock the adjustment screws.


FWD side
REV side
adjustment screws

Playback Level Adjustment

Procedure :

1. Mode : FWD playback


test tape
P-4-L300
(315Hz, 0dB)
VTVM
set
+
−
DOLBY OUT

Adjustment the RV101 (L-CH) and RV201 (R-CH) control so that the level is within the following range.

Adjustment values :

DOLBY OUT level : 0.19 to 0.17V (−12.4dB to −13.0dB)

Level difference between channels : 0.3dB max.

Verify that the DOLBY OUT output level is not changed when playback and stop operations are repeated.

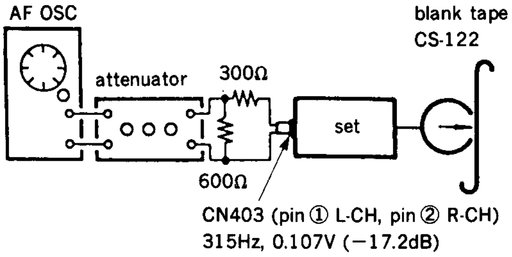
2. Go into the REV playback mode and verify that the level difference from FWD is within 0.5dB.

Adjustment Location : audio-CD board (See page 34.)

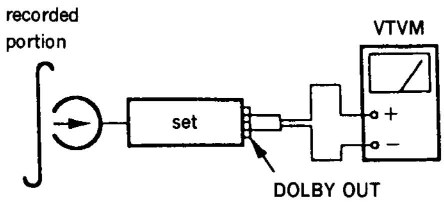
Record Level Adjustment

Procedure :

1. Mode : FWD record


AF OSC
blank tape
CS-122
attenuator
300Ω
set
600Ω
CN403 (pin ① L-CH, pin ② R-CH)
315Hz, 0.107V (−17.2dB)

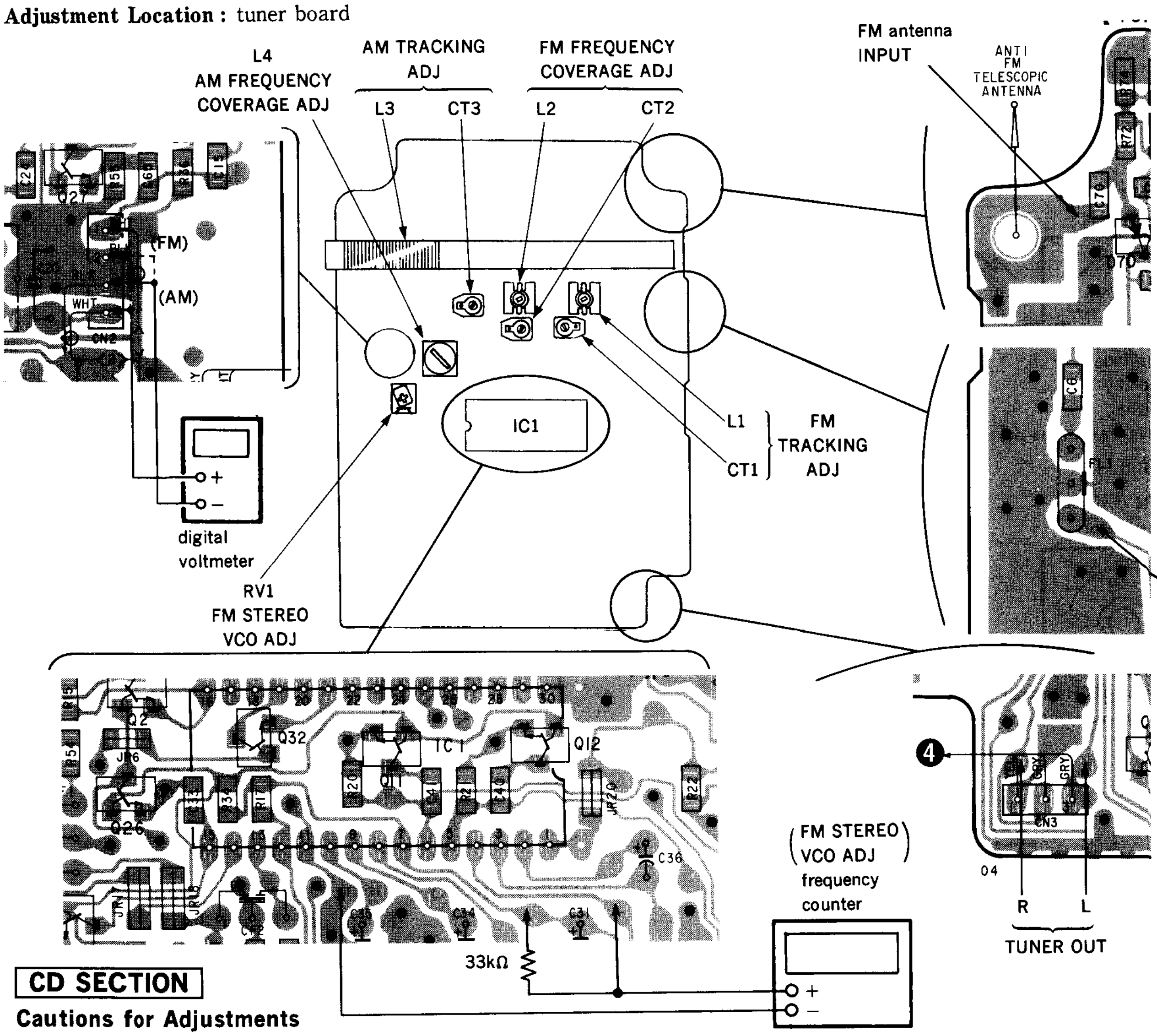
2. Mode : FWD playback


recorded
portion
VTVM
set
+
−
DOLBY OUT

3. Place the function switch in the TUNER position. Remove CN403 from the control board. When 315Hz, −17.2dB is input to the receptacle in the board from which the connector was removed, verify that the level of the PB OUT recorded and reproduced shows a difference within 0±0.5dB from the level of the DOLBY OUT.
   If outside the specified range, adjust the RV102 (L-CH) and RV202 (R-CH) controls and repeat steps 1 and 2.
4. Also in the REV record mode, confirm that the requirement is met.

Adjustment Location : audio-CD board (See page 34.)

Adjustment Location : tuner board


L4
AM FREQUENCY COVERAGE ADJ
AM TRACKING ADJ
L3
CT3
FM FREQUENCY COVERAGE ADJ
L2
CT2
FM antenna INPUT
ANTI FM TELESCOPIC ANTENNA
(FM)
(AM)
WHT
CN2
digital voltmeter
+
−
IC1
L1
CT1
FM TRACKING ADJ
RV1
FM STEREO VCO ADJ
FM IF INPUT
Q2
Q32
TC1
Q12
Q26
C36
❹
GRY
GRY
CN3
04
R
L
TUNER OUT
(FM STEREO VCO ADJ) frequency counter
33kΩ
+
−

CD SECTION

Cautions for Adjustments

1. Be sure to activate the test mode before making adjustments.
   After the adjustments are complete, be sure to release the system from the test mode.
2. Perform the adjustments in the order that they are described below.
3. The disc should be used only when the "YEDS-18" Part No.: 3-702-101-01 is specified.

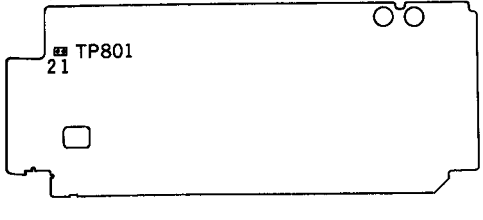
Before Adjustments

Place the set into the test mode and perform the following checks. If any fault is found, repair it.

How to Create the Test Mode

1. Short between JW858 and JW859 (TP801 pin ① and pin ②) on the control board.
2. Turn ON the POWER.
3. Set the function to CD.
4. When a test pattern begins to flicker on the LED display, remove the short from JW858 and JW859.

control board — component side —



- **Sled motor check**

Procedure :

1. First, press ▯▯ key. (The test pattern on the LED stops flickering and the BTL MUTE is cleared.)
2. Press ▶▶|/|◀◀ keys and verify that the optical pick-up moves from the innermost perimeter to the outermost perimeter then to the innermost perimeter smoothly with no hesitations or abnormal sound.
   ▶▶| : Moves the pick-up to the outer perimeter.
   |◀◀ : Moves the pick-up to the inner perimeter.

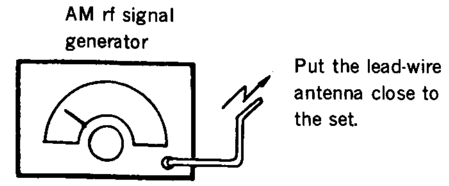
- **Focus search check**

Procedure :

1. Press ▷ key. (The focus search is continuously made.)
2. Observe the objective lens of ohe optical pick-up and verify that the objective lens moves vertically smoothly without no hesitations or abnormal sound.
3. Press □ key. (The focus search stops and the table continues to be rotating.)
4. Press □ key again and hold down it to stop the turn table.
   (Caution) If any abnormality (such as run away) is caused by pressing a wrong key, turn OFF the POWER and retry from creating the test mode.

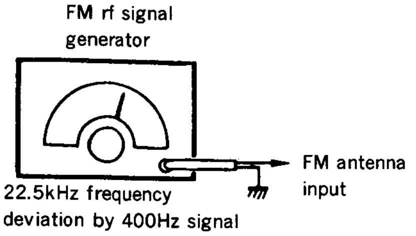
TUNER SECTION

- AM Section

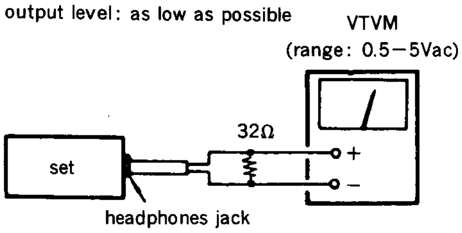

AM rf signal generator
Put the lead-wire antenna close to the set.

30% amplitude modulation by 400Hz signal
output level: as low as possible

- FM Section


FM rf signal generator
FM antenna input

22.5kHz frequency deviation by 400Hz signal
output level: as low as possible


VTVM
(range: 0.5−5Vac)
32Ω
set
+
−
headphones jack

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT		
adjustment part	reading on digital voltmeter	frequency indicator
L2	3.7±0.1V	87.5MHz
CT2	9.0±0.1V	108MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	CT1
87.5MHz	108MHz

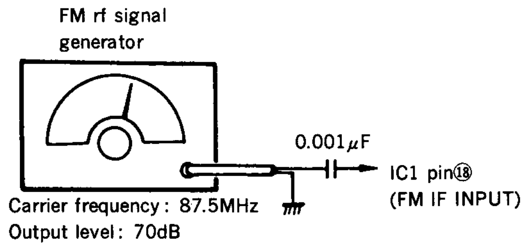
AM FREQUENCY COVERAGE ADJUSTMENT		
adjustment part	reading on digital voltmeter	frequency indicator
L4	2.1±0.1V	531kHz
confirm	within 8.0 to 9.0V	1,611kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	CT3
621kHz	1,404kHz

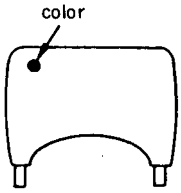
FM Stereo VCO Adjustment

Procedure :

- BAND switch. . . . FM


FM rf signal generator
0.001μF
IC1 pin⑱
(FM IF INPUT)
Carrier frequency: 87.5MHz
Output level: 70dB

Carrier frequency : The frequency indicated by the color on the caramic filter (CF1, 2, 3).

	Color	Carrier Frequency
	white	10.75MHz

Output level : 70dB

Adjust RV1 so that the frequency counter reads 76.0kHz± 0.1kHz.

Adjustment Location : tuner board (See page 36.)

REFERENCE

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow up (vertical and horizontal) relative to mechanical noise and shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

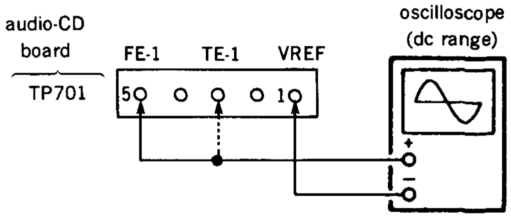
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP →▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

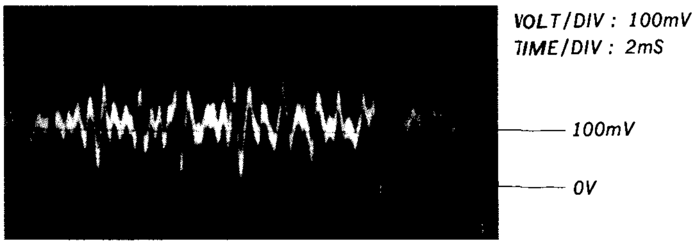
— **Primary Adjustment** —

Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment.
If the positions after the primary adjustment are only a little different, return the controls to the original position.

Procedure :

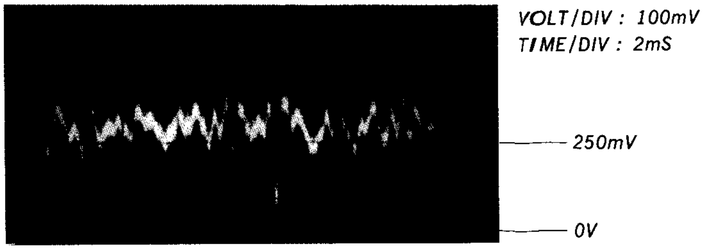


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Connect oscilloscope to TP701 pin ① (VREF) and pin ⑤ (FE-1) on audio-CD board.
3. Insert disc (YEDS-18) and press ▷ PLAY button.
4. Adjustment RV702 on audio-CD board so that the waveform is as shown in the figure below. (focus gain adjustment)

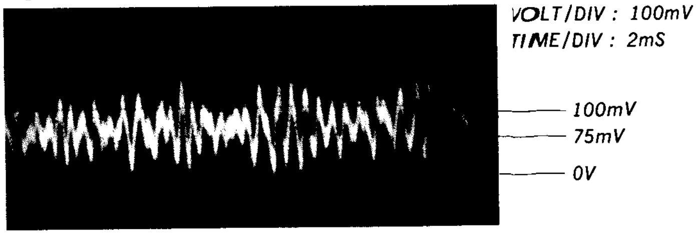


- Incorrent Examples (DC level changes more than on adjusted waveform)

low focus gain

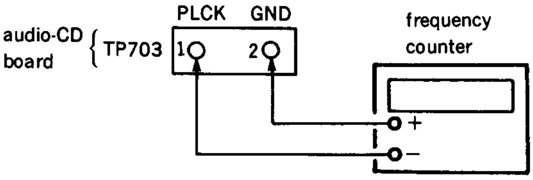


high focus gain



VCO Free-run Adjustment

Procedure :



1. Short between TP704 pin① and pin② on the audio-CD board.
2. Connect a frequency counter between TP703 pin① (PLCK) and pin② (GND).
3. Activate the test mode.
4. Set the CD DUB SPEED (S407) to NORMAL and adjust RV703 so that the frequency counter reads 4.3218MHz± 10kHz. (normal speed)

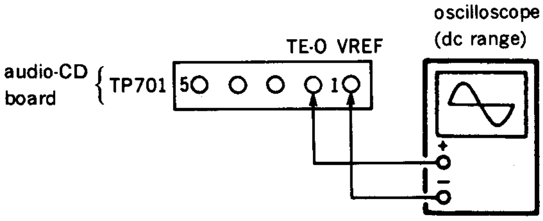
   Set the CD DUB SPEED (S407) to HIGH and adjust RV704 so that the frequency counter reads 8.768MHz± 10kHz. (high speed)
5. After adjustment, release the set from the test mode.
6. Remove the short provided in step 1 from TP704.

Adjustment Location : audio-CD board (See page 39.)

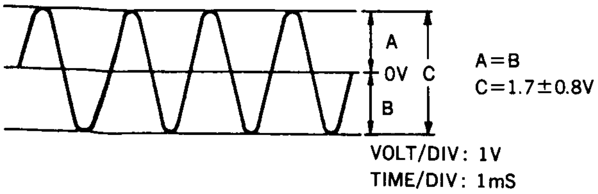
Traverse Adjustment

This adjustment should be made when the optical pick-up is replaced or repaired.

Procedure :



1. Connect an oscilloscope between TP701 pin① (VREF) and pin② (TE-0) on the audio-CD board.
2. Active the test mode.
3. Press ▶▶|/|◀◀ keys to move the optical pick-up to the center position.
4. Place the compact disc (YEDS-18) and press ▷ key. The system starts focus search, turns on the focus mode and enter the CLV pull mode. The tracking and sled modes are turned OFF. For tracking servo to ON, press the DISPLAY key.
5. Adjust RV791 on the CD motor board so that the waveform on the oscilloscope is vertically symmetrical with respect to 0V.
6. After this adjustment, release the set from the test mode.

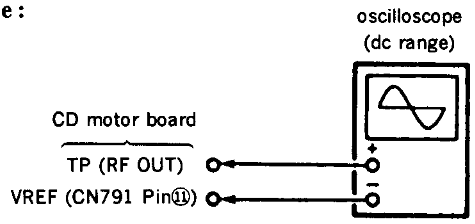


Adjustment Location : CD motor board (See page 39.)

Focus Bias Adjustment

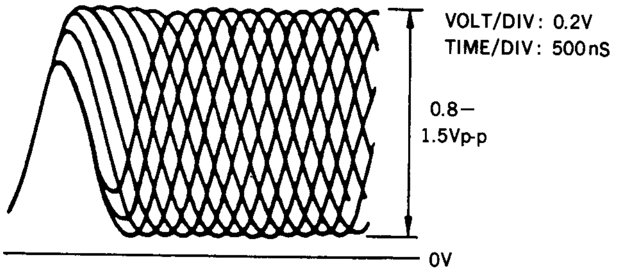
This adjustment should be made when the optical pick-up is replaced or repaired.

Procedure :



1. Connect an oscilloscope between TP (RF OUT) and CN791 pin⑪ on the CD motor board.
2. Activate the test mode.
3. Press ▶▶|/|◀◀ keys to move the optical pick-up to the center position.
4. Place the compact disc (YEDS-18) and press ▷ key.
5. Adjust RV792 on the CD motor board so that the waveform on the oscilloscope shows a clear eye pattern.
6. After this adjustment, release the set from the test mode.

- RF Signal Reference Waveform (Eye Pattern)

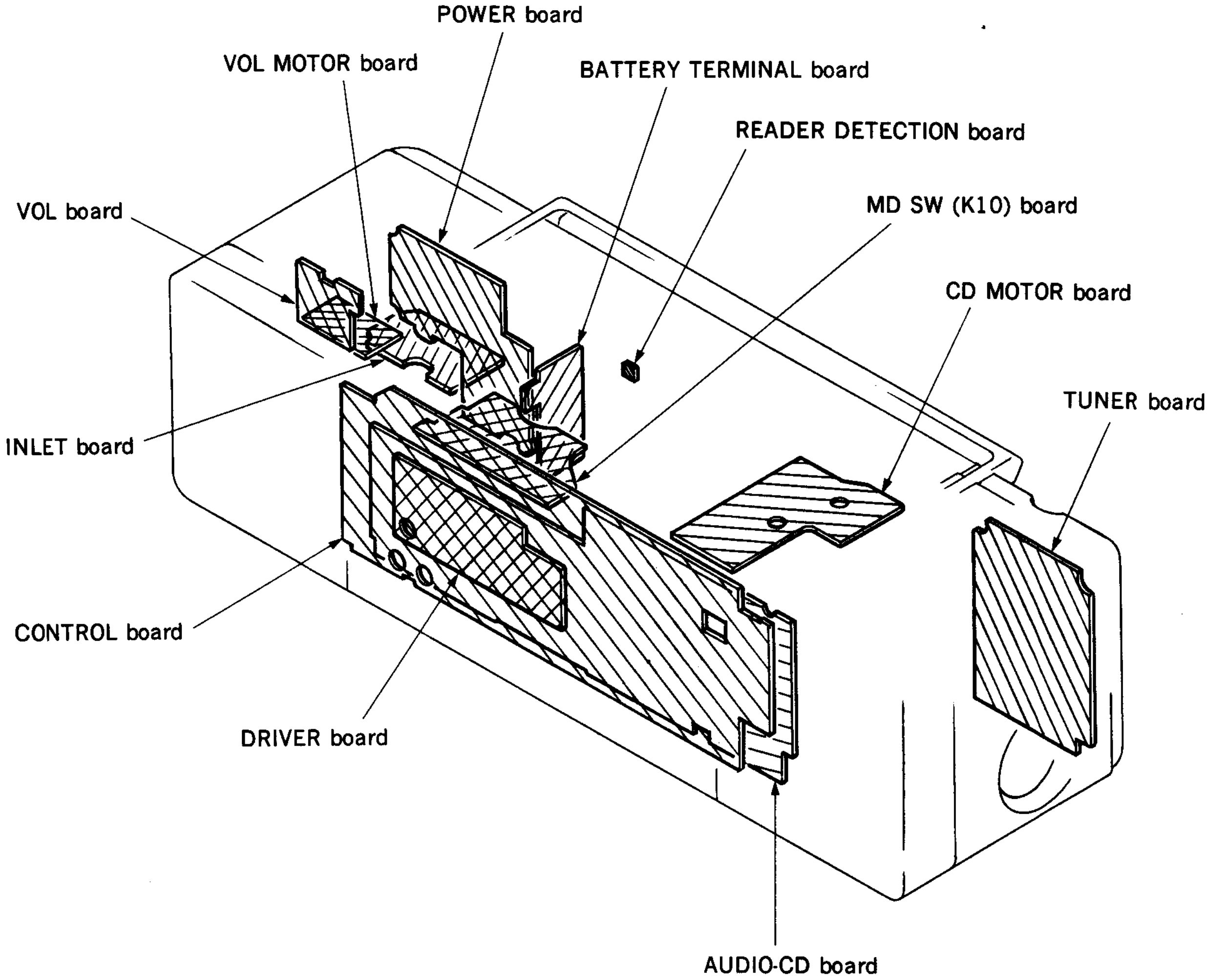


When observing the pattern, set an oscilloscope to AC range and increase the vertical sensitivity. This makes the pattern more easily visible.

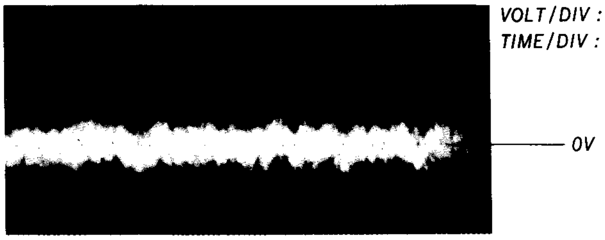
Adjustment Location : CD motor board (See page 39.)

SECTION 7
DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION

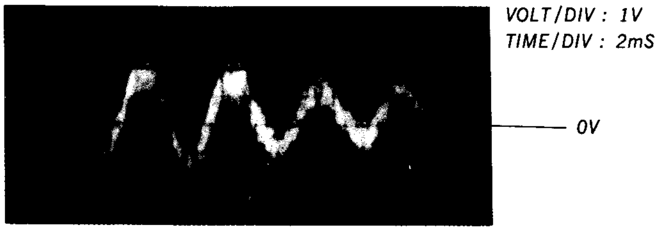

POWER board
VOL MOTOR board
BATTERY TERMINAL board
READER DETECTION board
VOL board
MD SW (K10) board
CD MOTOR board
TUNER board
INLET board
CONTROL board
DRIVER board
AUDIO-CD board

5. Connect oscilloscope to TP701 pin ① (VREF) and pin ③ (TE-1) on audio-CD board.
6. Press ▷ PLAY button.
7. Adjusted RV701 on audio-CD board so that the waveform is as shown the figure below. (tracking gain adjustment)

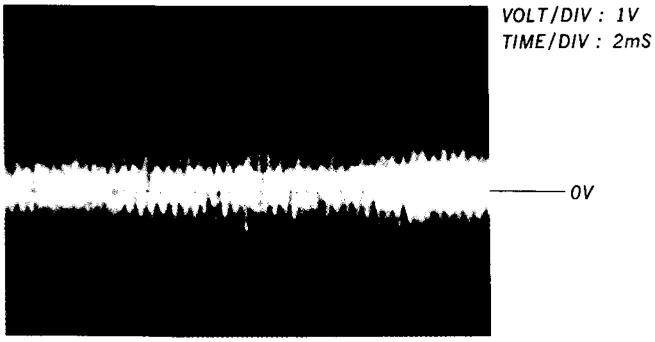


- Incorrect Examples (fundamentia wave appears)

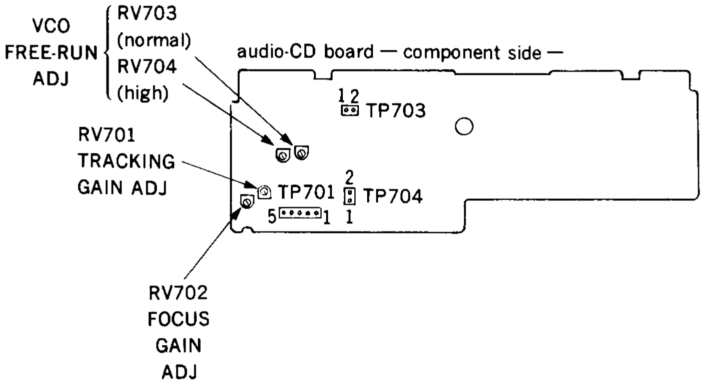
low tracking gain

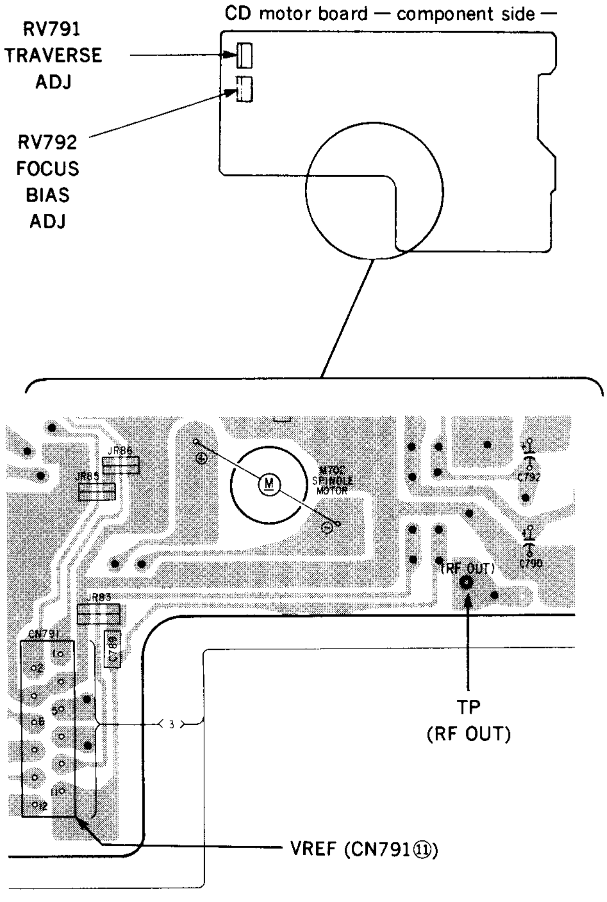


high tracking
(high fandamential wave than for low gain)



Adjustment Location :


VCO FREE-RUN ADJ
RV703 (normal)
RV704 (high)
audio-CD board — component side —
1 2
TP703
RV701 TRACKING GAIN ADJ
TP701
2
TP704
5
1
1
RV702 FOCUS GAIN ADJ


CD motor board — component side —
RV791 TRAVERSE ADJ
RV792 FOCUS BIAS ADJ
JR86
JR85
M702 SPINDLE MOTOR
C792
C790
RF OUT
JR83
CN791
C789
TP (RF OUT)
VREF (CN791⑪)

— FOCUS BIAS ADJ —

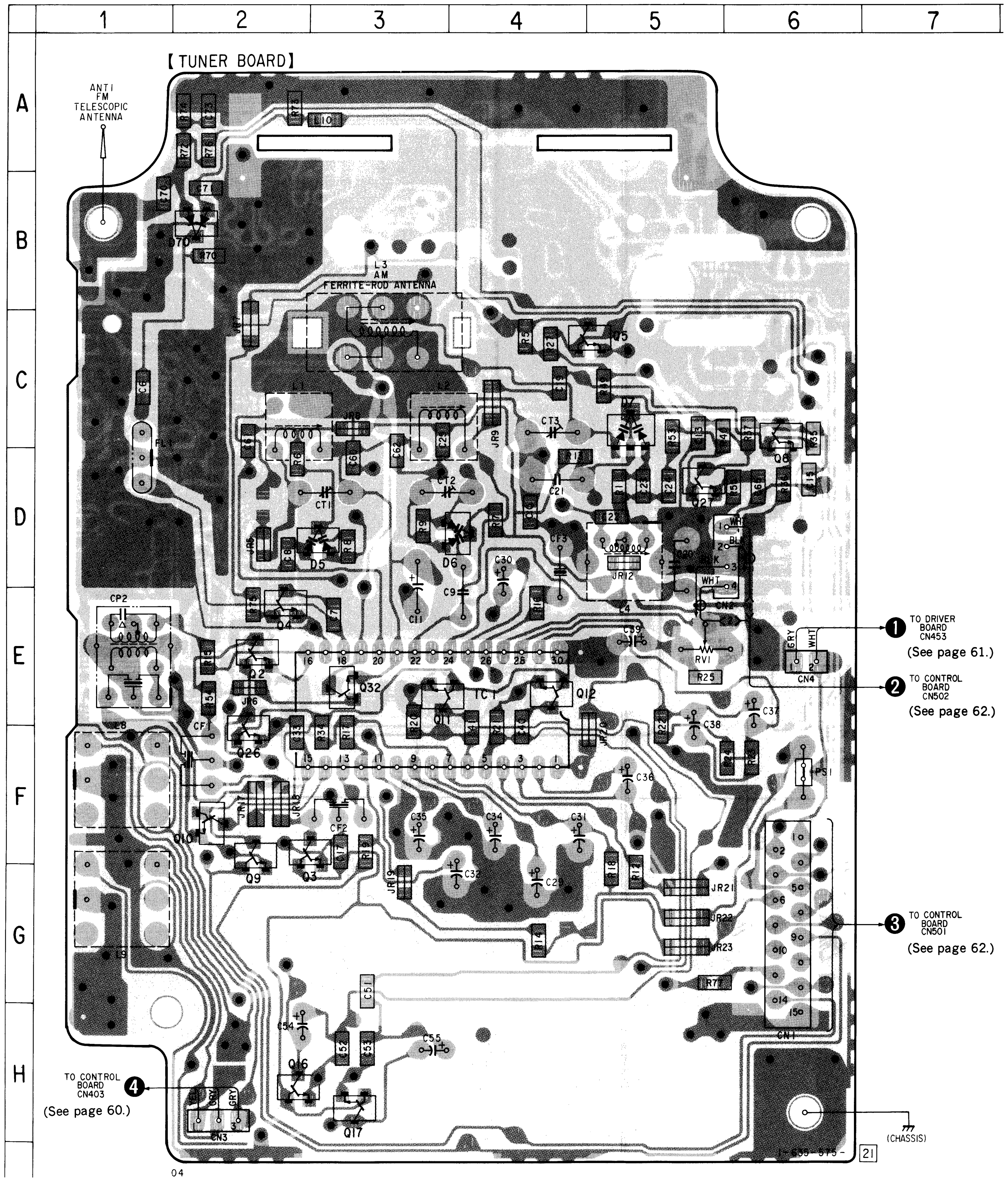
• Semiconductor Location

Ref. No.	Location
D5	D-3
D6	D-4
D7	C-5
D70	B-2
IC1	E-4
Q2	E-2
Q3	F-2
Q4	E-2
Q5	C-5
Q8	C-6
Q9	F-2
Q10	F-2
Q11	E-3
Q12	E-4
Q16	H-2
Q17	H-3
Q26	F-2
Q27	D-5
Q32	E-3

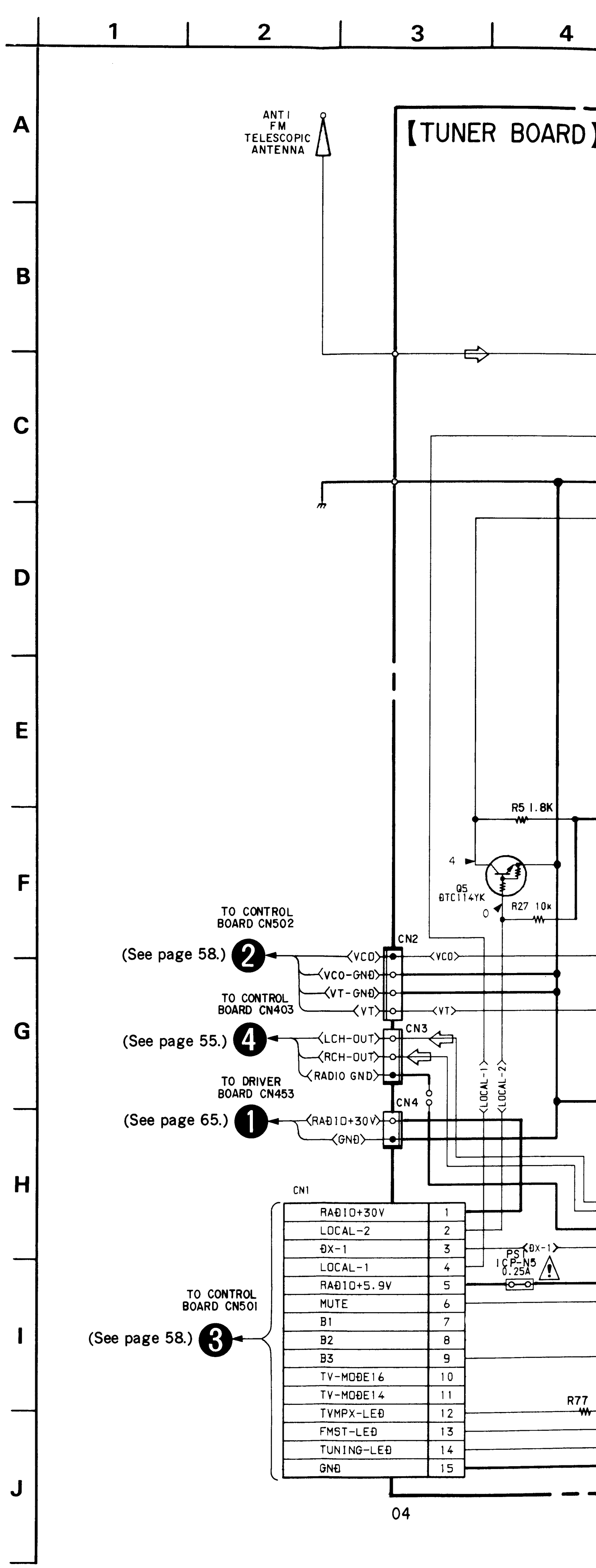
Note:

- ○—— : parts extracted from the component side.
- ⁝‑ indicates side identified with part number.
- ● : Through hole.
- ░ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

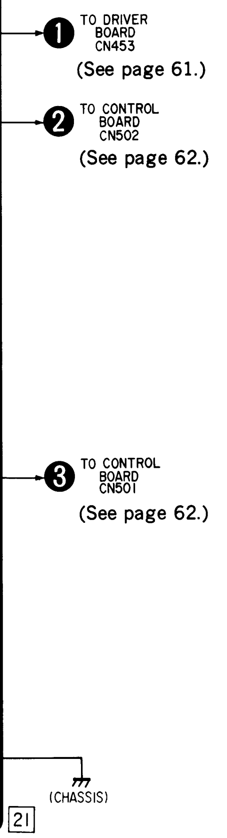
7-2. PRINTED WIRING BOARDS — TUNER SECTION — • Refer to page 71 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
【TUNER BOARD】
ANTI FM TELESCOPIC ANTENNA
L3 AM FERRITE-ROD ANTENNA
D70
D5
D6
D4
Q2
Q26
Q32
Q11
IC1
Q12
Q10
Q9
Q3
Q16
Q17
Q5
Q8
Q27
CP2
CF1
CF2
CT1
CT2
CT3
L1
L2
L4
RV1
R25
CN1
CN2
CN3
CN4
PS1
JR12
JR21
JR22
JR23
WHT
BLK
GRY
TO DRIVER BOARD CN453
(See page 61.)
TO CONTROL BOARD CN502
(See page 62.)
TO CONTROL BOARD CN501
(See page 62.)
TO CONTROL BOARD CN403
(See page 60.)
(CHASSIS)
21
04

7-3. SCHEMATIC DIAGRAM — TUNER SECTION — • Refe

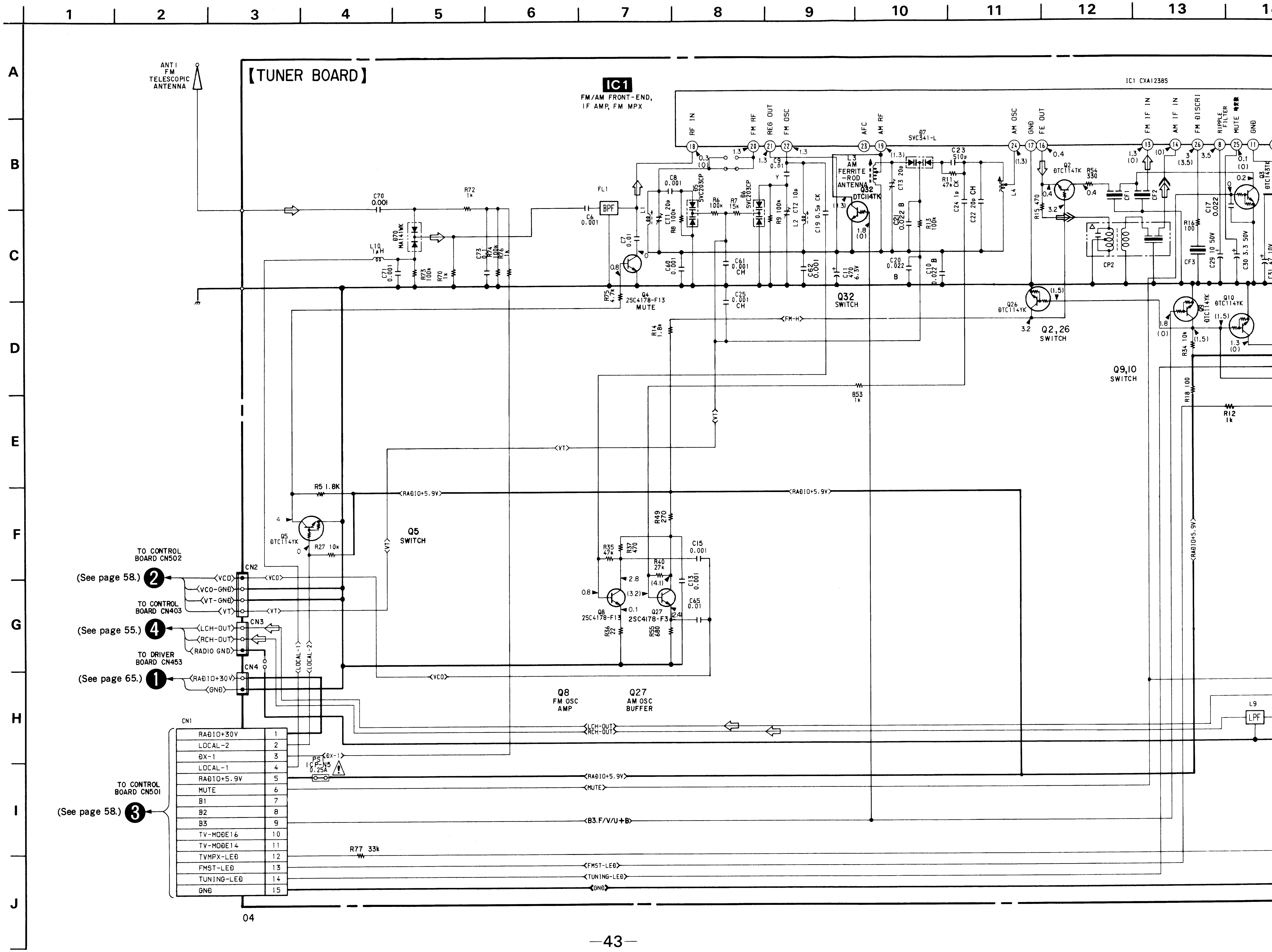

1
2
3
4
A
B
C
D
E
F
G
H
I
J
ANTI FM TELESCOPIC ANTENNA
【TUNER BOARD】
R5 1.8K
Q5 DTC114YK
R27 10k
TO CONTROL BOARD CN502
(See page 58.) 2
VCO
VCO-GND
VT-GND
VT
CN2
TO CONTROL BOARD CN403
(See page 55.) 4
LCH-OUT
RCH-OUT
RADIO GND
CN3
TO DRIVER BOARD CN453
(See page 65.) 1
RADIO+30V
GND
CN4
LOCAL-1
LOCAL-2
CN1
RADIO+30V 1
LOCAL-2 2
DX-1 3
LOCAL-1 4
RADIO+5.9V 5
MUTE 6
B1 7
B2 8
B3 9
TV-MODE16 10
TV-MODE14 11
TVMPX-LED 12
FMST-LED 13
TUNING-LED 14
GND 15
TO CONTROL BOARD CN501
(See page 58.) 3
PS1 ICP-N5 0.25A
DX-1
R77
04

ts.



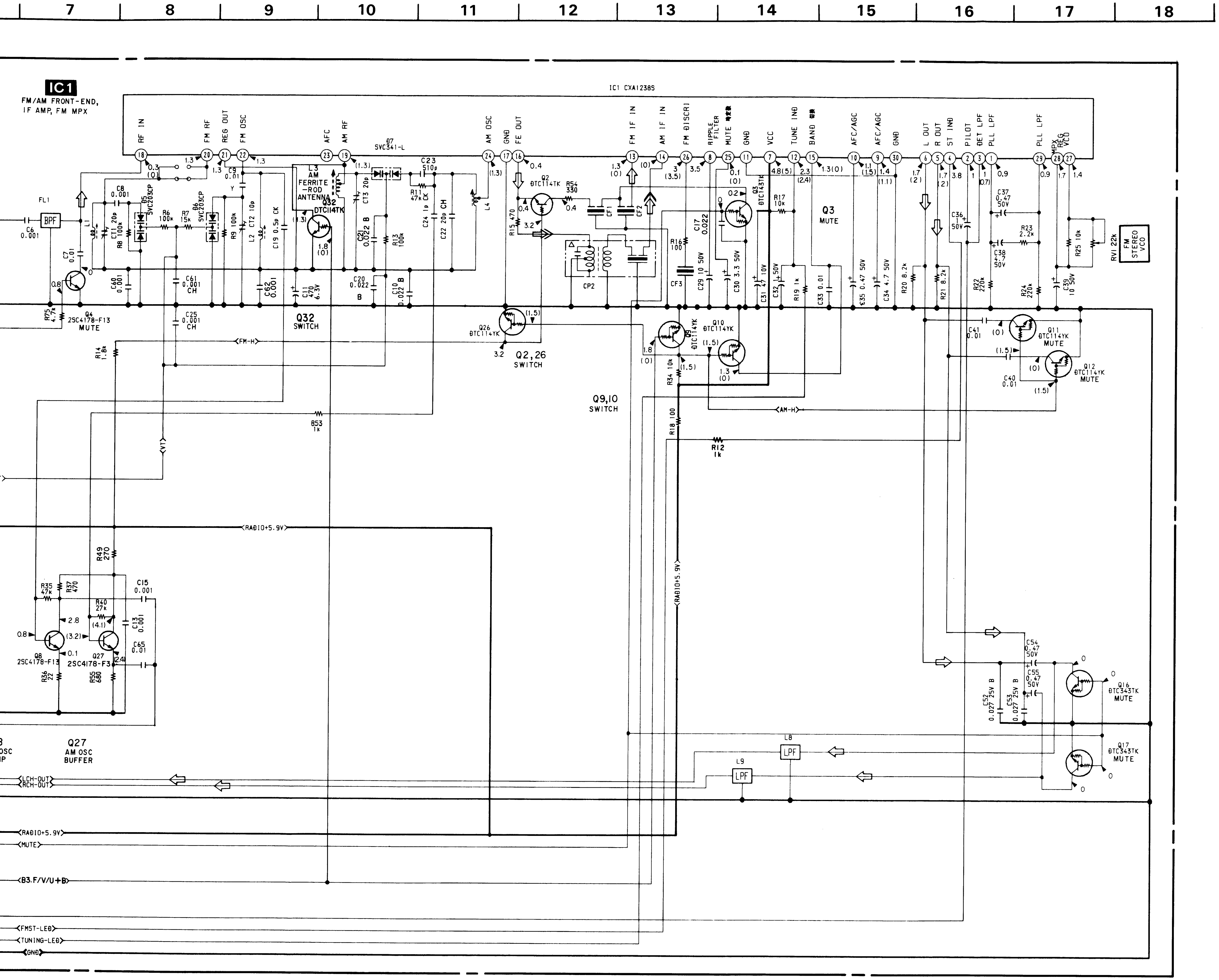
❶ TO DRIVER BOARD CN453
(See page 61.)
❷ TO CONTROL BOARD CN502
(See page 62.)
❸ TO CONTROL BOARD CN501
(See page 62.)
(CHASSIS)
21

7-3. SCHEMATIC DIAGRAM — TUNER SECTION — •Refer to page 74 for IC Block Diagrams.



1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
ANTI FM TELESCOPIC ANTENNA
【TUNER BOARD】
IC1
FM/AM FRONT-END, IF AMP, FM MPX
IC1 CXA1238S
RF IN
FM RF
REG OUT
FM OSC
AFC
AM RF
AM OSC
GND
FE OUT
FM IF IN
AM IF IN
FM DISCRI
RIPPLE FILTER
MUTE
GND
C70 0.001
R72 1k
FL1
BPF
C6 0.001
L10 1μH
D70 MA141WK
C71 0.001
R73 100k
R70 1k
C73
R74 100k
R76 1k
C7 0.01
R75 4.7k
Q4 2SC4178-F13 MUTE
C8 0.001
D5 SVC203CP
CT1 20p
R8 100k
R6 100k
R7 15k
D6 SVC203CP
R9 100k
L2
CT2 10p
C19 0.5p CK
C9 0.01
C60 0.001
C61 0.001 CH
C25 0.001 CH
C62 0.001
C11 470 6.3V
L3 AM FERRITE-ROD ANTENNA
Q32 DTC114TK
Q32 SWITCH
CT3 20p
C21 0.022 B
C20 0.022 B
C10 0.022 B
D7 SVC341-L
C23 510p
R11 47k CK
R13 100k
C24 1p CK
C22 20p CH
L4
R15 470
Q2 DTC114TK
R54 330
CF1
CF2
CP2
R16 100
CF3
C17 0.022
C29 10 50V
C30 3.3 50V
Q3 DTC143TK
Q26 DTC114YK
Q2,26 SWITCH
Q9 DTC114YK
Q10 DTC114YK
Q9,10 SWITCH
R34 10k
R18 100
R12 1k
R53 1k
R14 1.8k
FM-H
VT
RADIO+5.9V
R5 1.8K
Q5 DTC114YK
R27 10k
Q5 SWITCH
R49 270
R35 47k
R37 470
R40 27k
C15 0.001
C13 0.001
C65 0.01
Q8 2SC4178-F13
Q27 2SC4178-F13
R36 22
R55 680
Q8 FM OSC AMP
Q27 AM OSC BUFFER
TO CONTROL BOARD CN502
(See page 58.) ❷
CN2
VCO
VCO-GND
VT-GND
VT
TO CONTROL BOARD CN403
(See page 55.) ❹
CN3
LCH-OUT
RCH-OUT
RADIO GND
TO DRIVER BOARD CN453
(See page 65.) ❶
CN4
RADIO+30V
GND
LOCAL-1
LOCAL-2
LCH-OUT
RCH-OUT
L9
LPF
CN1
RADIO+30V 1
LOCAL-2 2
DX-1 3
LOCAL-1 4
RADIO+5.9V 5
MUTE 6
B1 7
B2 8
B3 9
TV-MODE16 10
TV-MODE14 11
TVMPX-LED 12
FMST-LED 13
TUNING-LED 14
GND 15
TO CONTROL BOARD CN501
(See page 58.) ❸
PS1 ICP-N5 0.25A
DX-1
MUTE
B3.F/V/U+B
R77 33k
FMST-LED
TUNING-LED
GND
04

ns.


7
8
9
10
11
12
13
14
15
16
17
18
IC1
FM/AM FRONT-END, IF AMP, FM MPX
IC1 CXA1238S
RF IN
FM RF
REG OUT
FM OSC
AFC
AM RF
AM OSC
GND
FE OUT
FM IF IN
AM IF IN
FM DISCRI
RIPPLE FILTER
MUTE
GND
VCC
TUNE IND
BAND
AFC/AGC
AFC/AGC
GND
L OUT
R OUT
ST IND
PILOT
DET LPF
PLL LPF
PLL LPF
MPX REG
VCO
FL1
BPF
L3 AM FERRITE-ROD ANTENNA
Q32 DTC114TK
Q32 SWITCH
Q4 2SC4178-F13 MUTE
Q2 DTC114TK
Q26 DTC114YK
Q2,26 SWITCH
Q3 DTC143TK
Q3 MUTE
Q9 DTC114YK
Q10 DTC114YK
Q9,10 SWITCH
Q11 DTC114YK MUTE
Q12 DTC114YK MUTE
RV1 22k
FM STEREO VCO
CF1
CF2
CF3
CP2
Q8 2SC4178-F13
Q27 2SC4178-F3
Q27 AM OSC BUFFER
Q16 DTC343TK MUTE
Q17 DTC343TK MUTE
L8 LPF
L9 LPF
FM-H
AM-H
RADIO+5.9V
LCH-OUT
RCH-OUT
MUTE
B3.F/V/U+B
FMST-LED
TUNING-LED
GND

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ▬ : B+ Line
- ☐ : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  (   ) : AM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : AM

7-4. PRINTED WIRING BOARDS — AUDIO/CD SECTION —

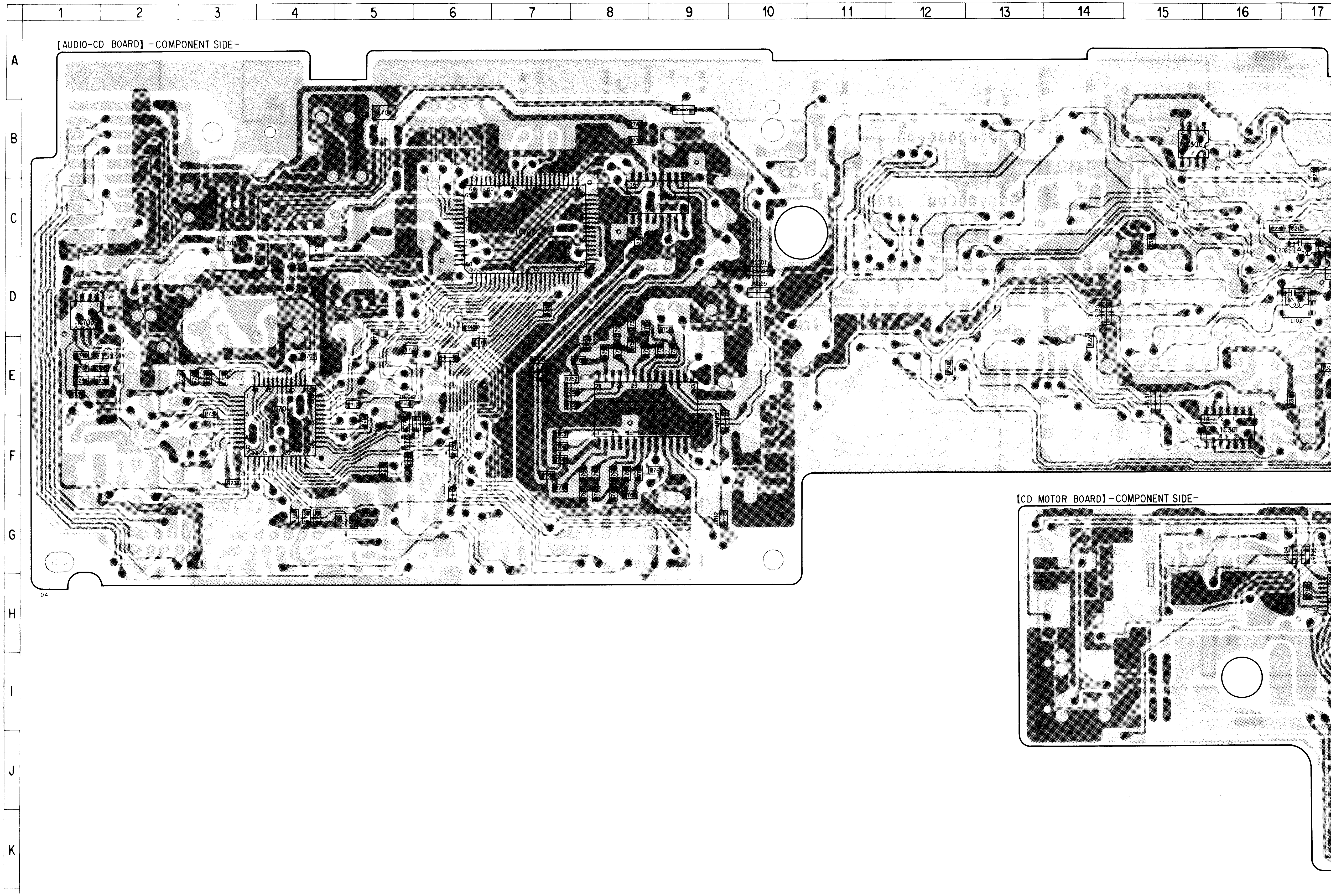
• Refer to page 71 for Semiconductor Lead Layouts.

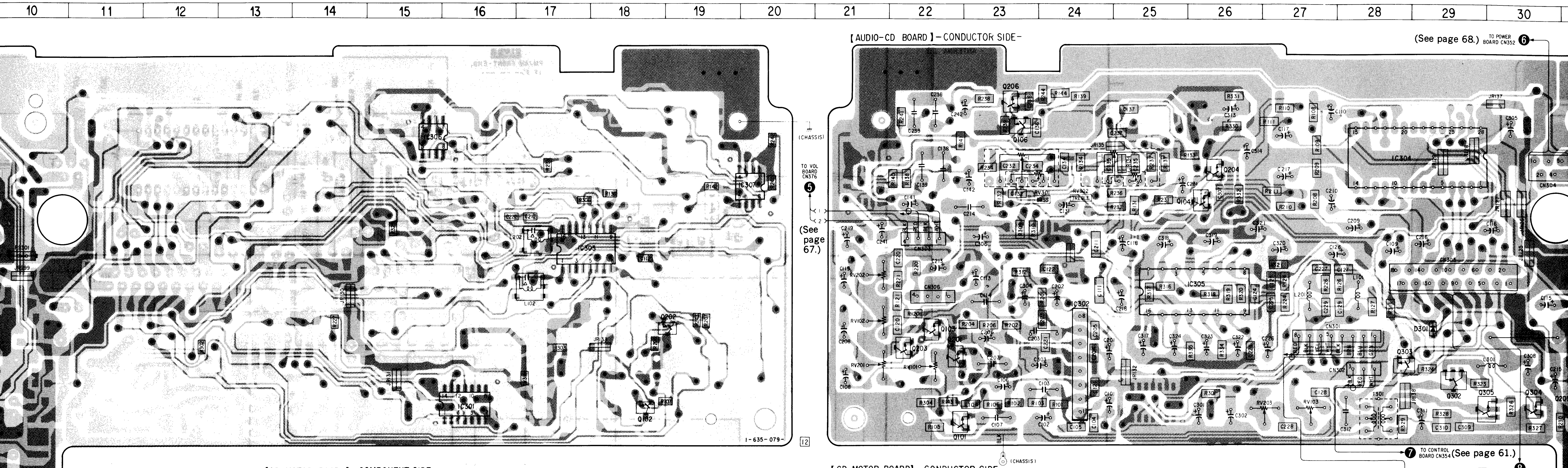
• Semiconductor Location

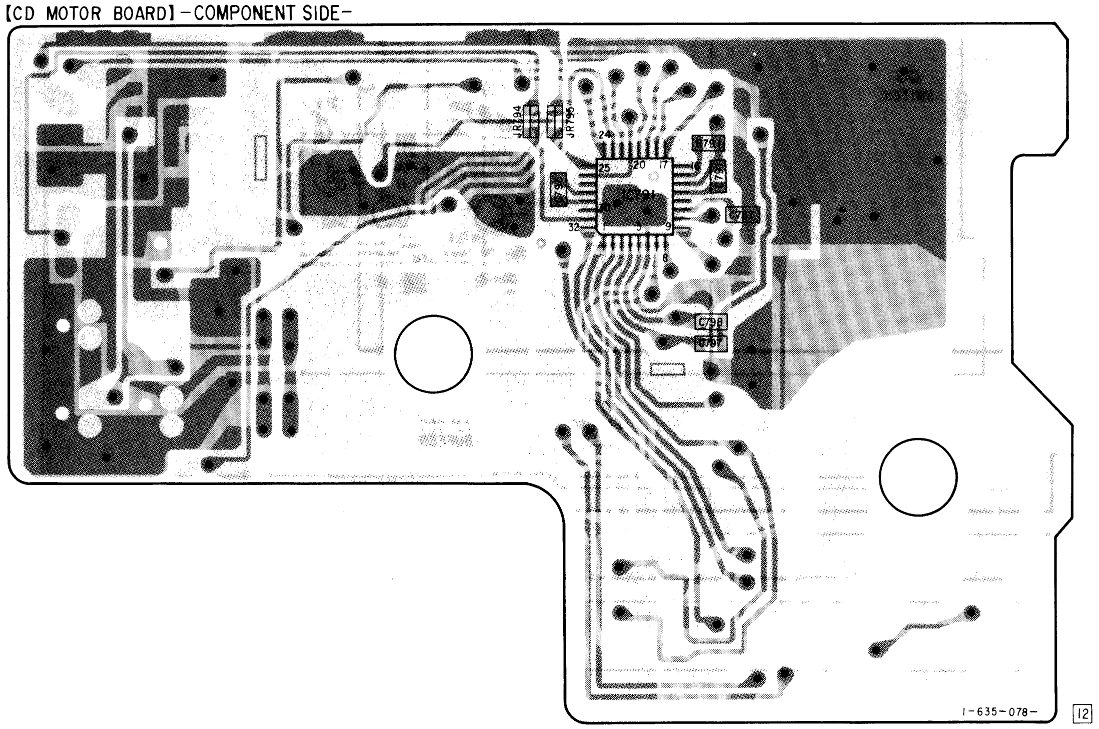
Ref. No.	Location
D301	E-29
D701	D-35
D702	C-37
D703	E-7
D704	D-39
D705	F-34
D706	B-36
D707	D-35
IC301	F-16
IC302	E-24
IC303	D-17
IC304	B-28
IC305	D-26
IC306	B-15
IC307	C-20
IC701	F-4
IC702	C-7
IC703	D-1
IC704	C-9
IC705	E-8
IC706	B-39
IC707	B-39
IC791	H-17
Q101	F-22
Q102	F-18
Q103	E-22
Q104	C-26
Q105	E-31
Q106	B-23
Q201	E-22
Q202	E-18
Q203	E-22
Q204	C-26
Q205	F-31
Q206	B-23
Q301	E-31
Q302	E-29
Q303	E-28
Q304	F-30
Q305	F-29
Q701	B-37
Q703	C-37
Q704	C-37
Q705	D-38
Q706	G-35
Q707	G-36
Q708	D-38
Q709	D-36
Q710	D-36
Q711	D-37
Q712	B-37
Q791	G-26

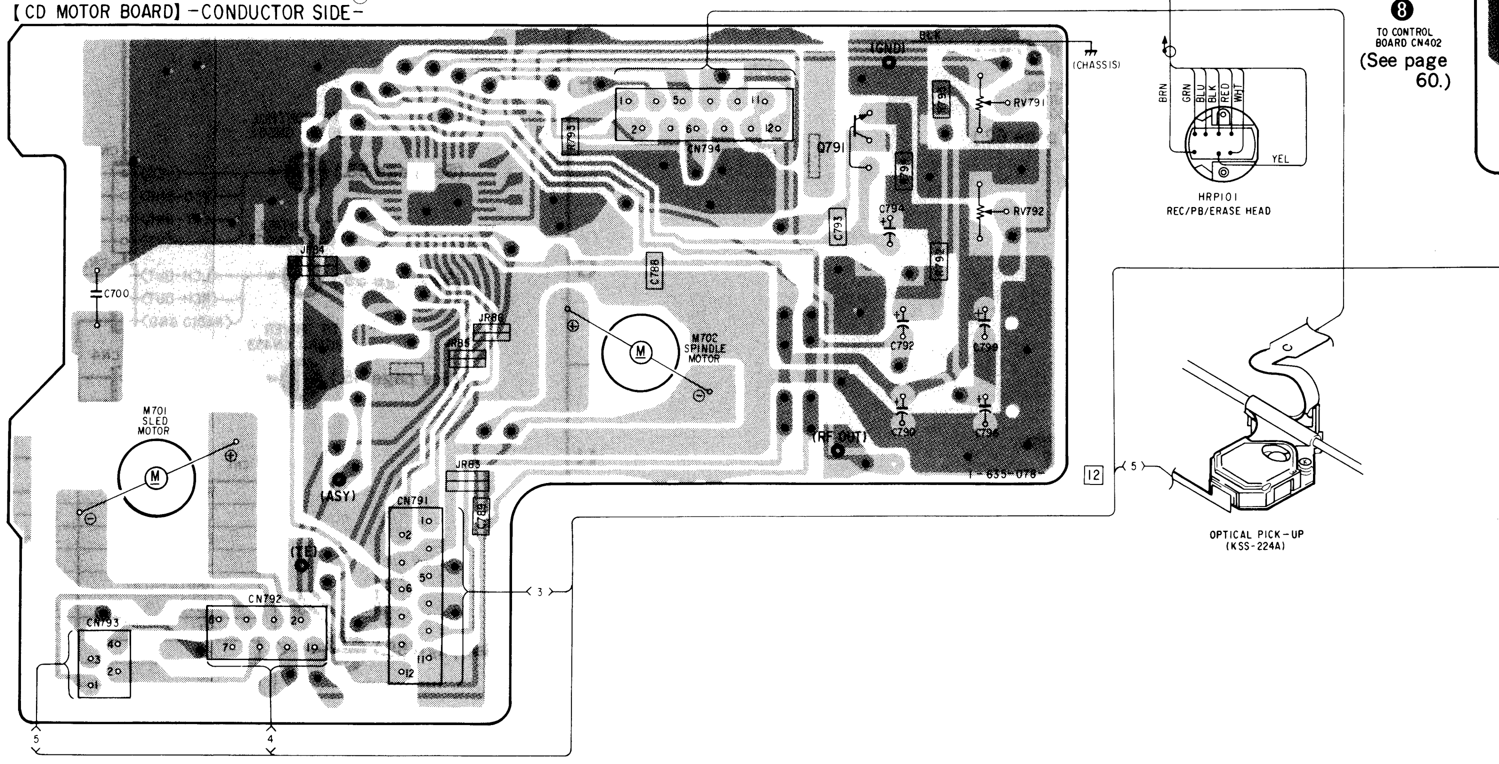
Note:

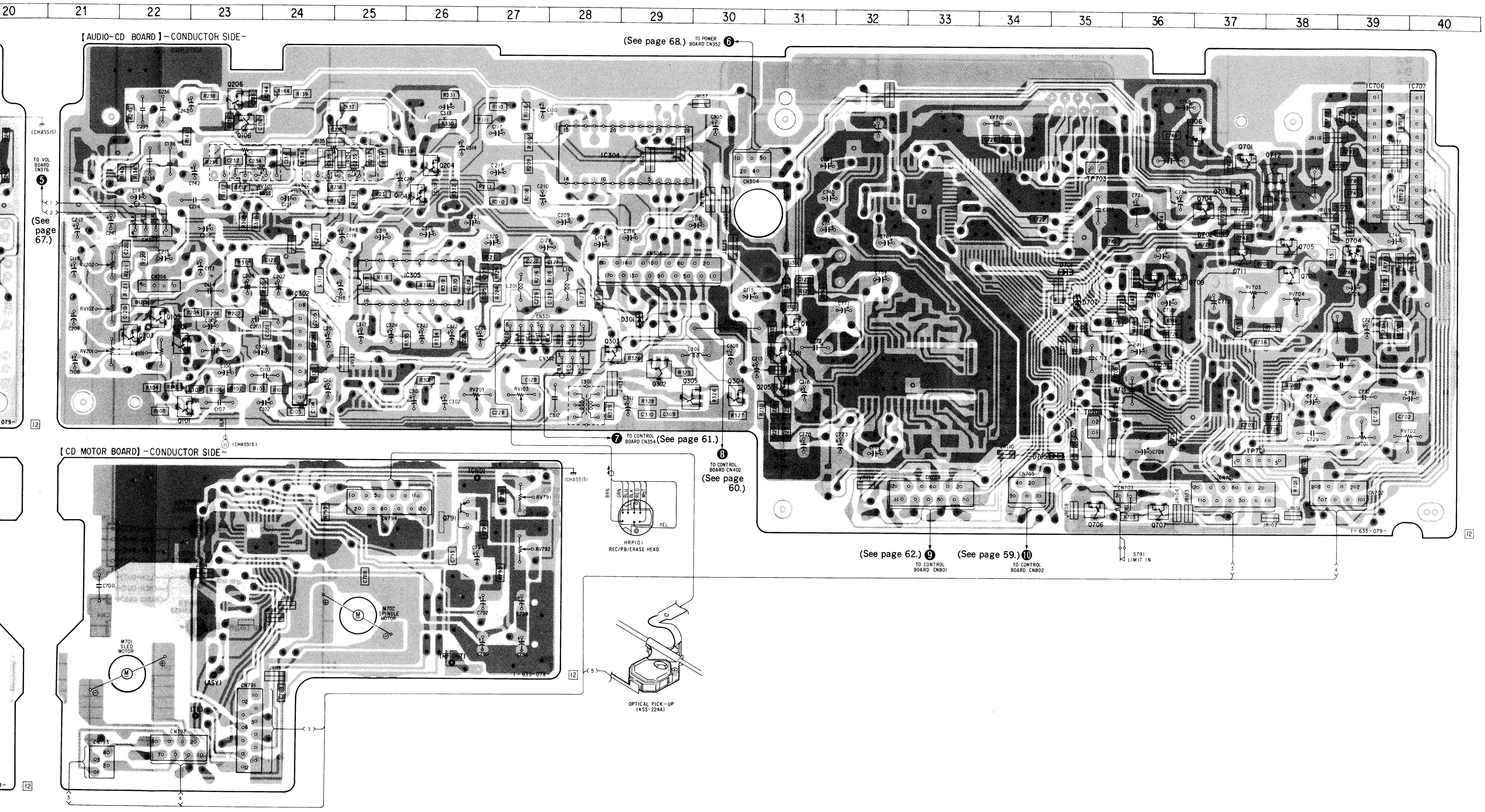
- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ⌐┘← indicates side identified with part number.
- ● : Through hole.
- ░ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
K
[AUDIO-CD BOARD] -COMPONENT SIDE-
IC702
IC701
IC703
IC301
IC306
L703
L202
L102
[CD MOTOR BOARD] -COMPONENT SIDE-
04

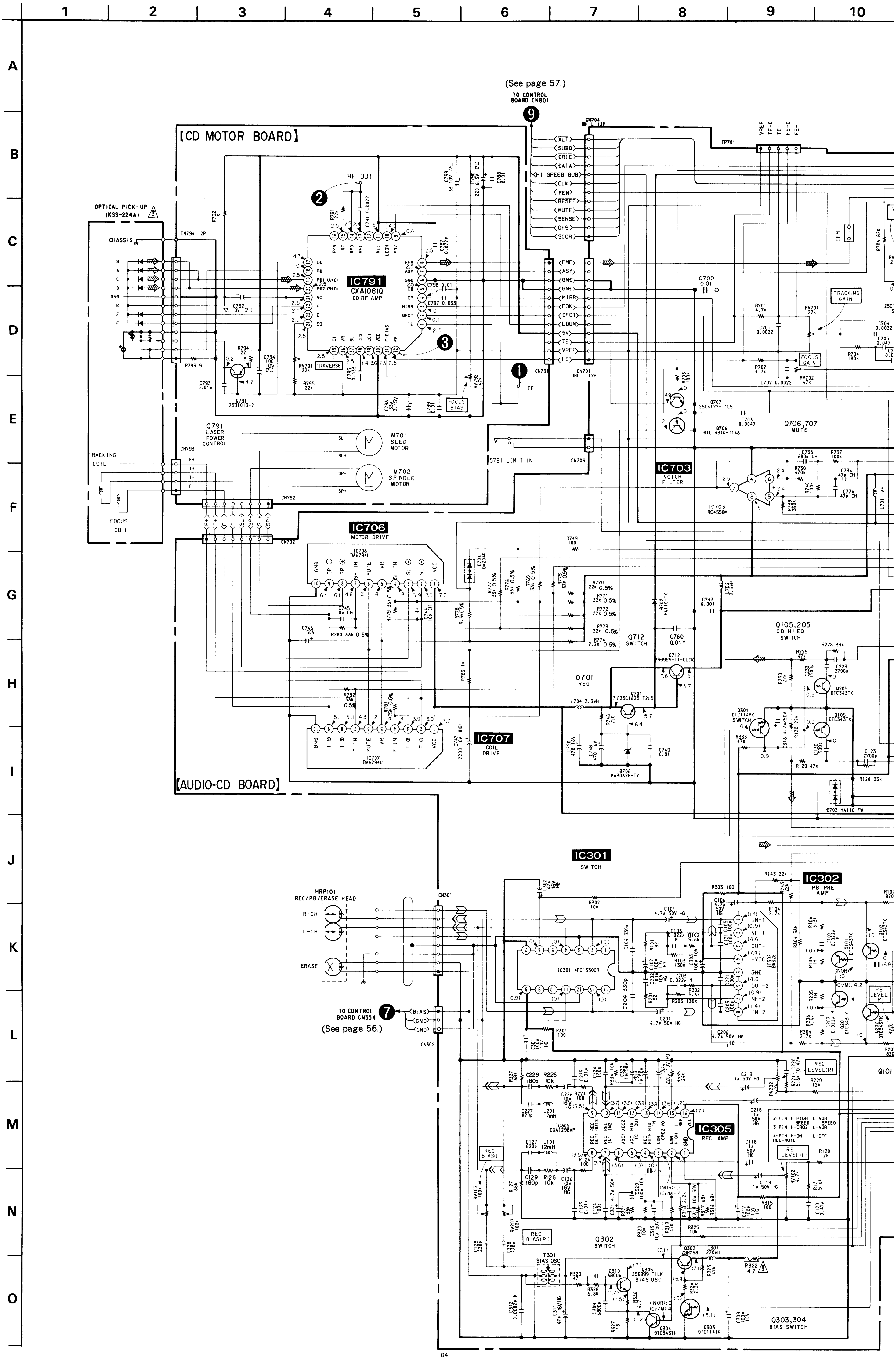

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
[AUDIO-CD BOARD] - CONDUCTOR SIDE -
(See page 68.) TO POWER BOARD CN352 ❻
(CHASSIS)
TO VOL BOARD CN376 ❺
(See page 67.)
TO CONTROL BOARD CN354 ❼ (See page 61.)
(CHASSIS)
IC301
IC302
IC303
IC304
IC305
IC306
IC307
CN301
CN302
CN304
CN305
CN306
Q101
Q102
Q103
Q104
Q106
Q202
Q203
Q204
Q206
Q301
Q302
Q303
Q304
Q305
D301
T301
RV101
RV102
RV103
RV201
RV202
RV203
RV301 BASS
RV302 TREBLE
L101
L102
L201
L202
1-635-079-
12

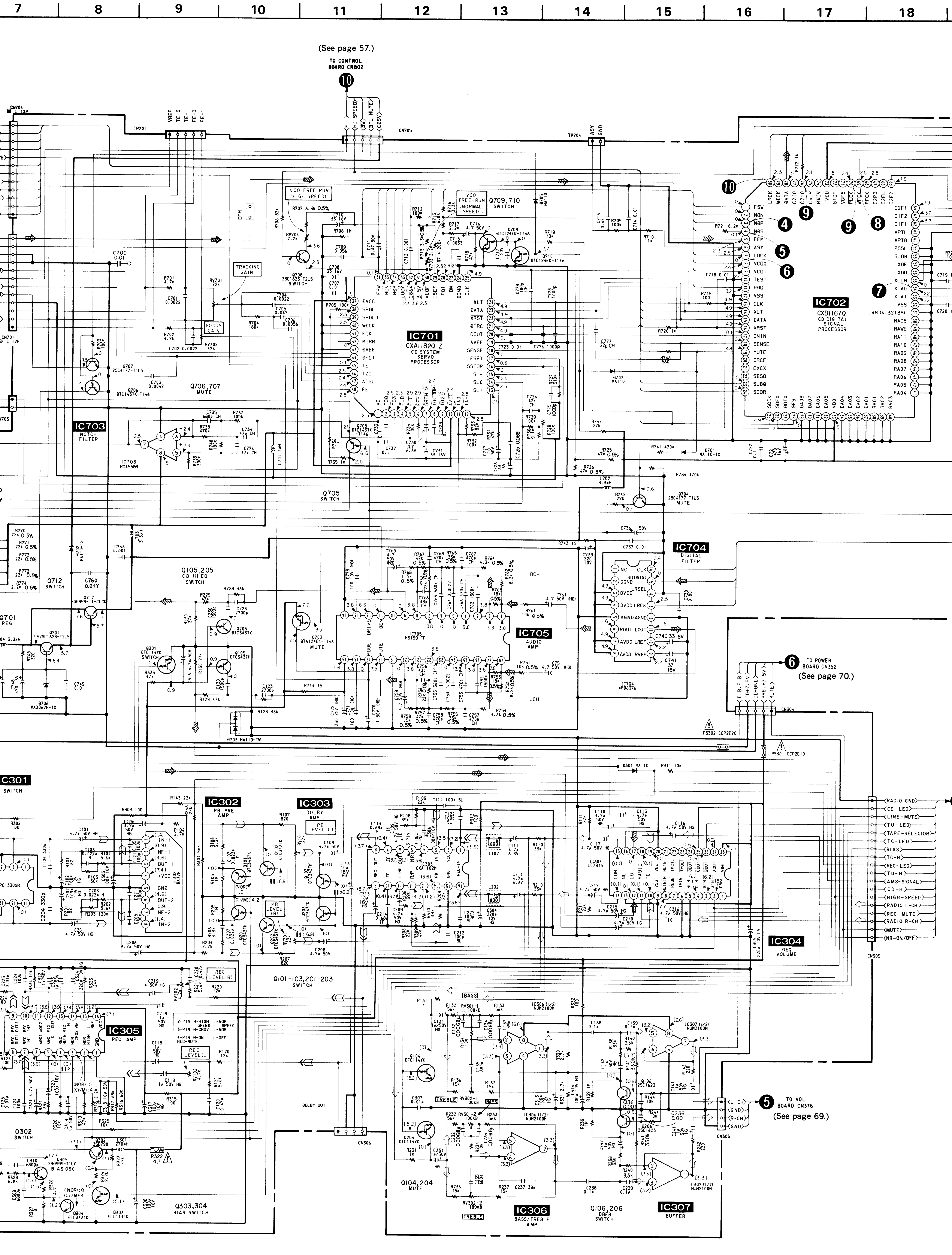

[CD MOTOR BOARD] - COMPONENT SIDE -
IC791
25
20
17
32
8
1-635-078-
12

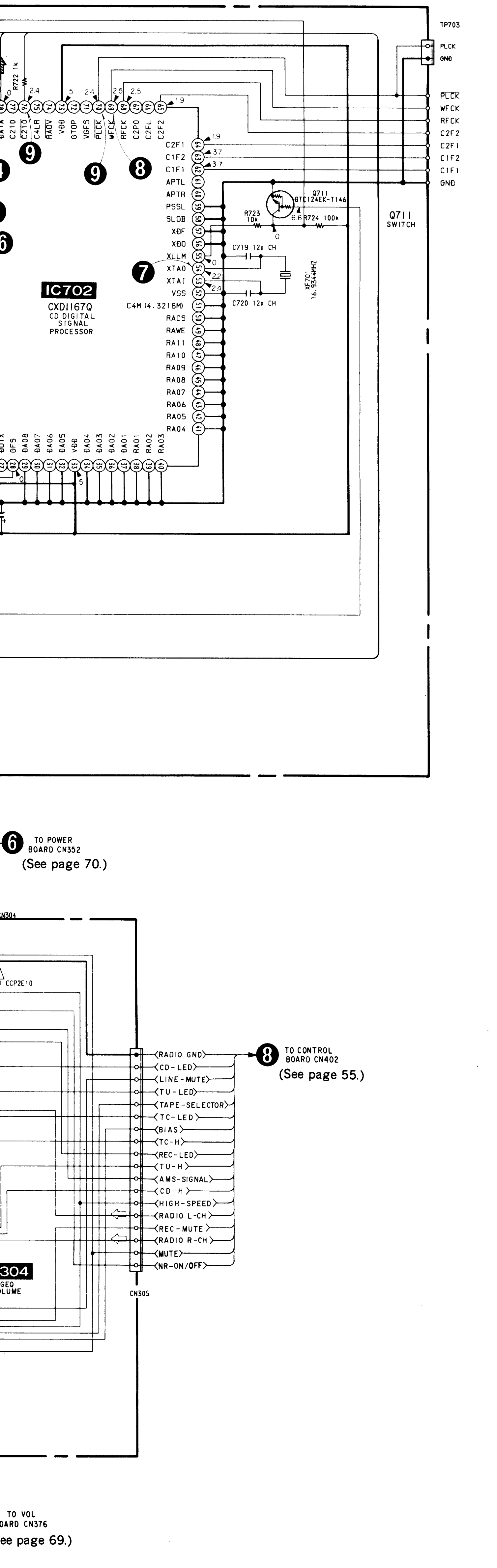

[CD MOTOR BOARD] - CONDUCTOR SIDE -
❽ TO CONTROL BOARD CN402 (See page 60.)
(CHASSIS)
(GND)
CN794
CN791
CN792
CN793
Q791
RV791
RV792
C700
C790
C792
C793
C794
C796
C798
JR85
JR86
JR87
M701 SLED MOTOR
M702 SPINDLE MOTOR
(ASY)
(TE)
(RF OUT)
BRN
BLU
BLK
RED
WHT
YEL
HRP101 REC/PB/ERASE HEAD
OPTICAL PICK-UP (KSS-224A)
1-635-078-
12


20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
[AUDIO-CD BOARD] -CONDUCTOR SIDE-
(See page 68.) TO POWER BOARD CN352 ❻
TO VOL BOARD CN376 ❺
(See page 67.)
(CHASSIS)
❼ TO CONTROL BOARD CN354 (See page 61.)
❽ TO CONTROL BOARD CN402 (See page 60.)
(See page 62.) ❾ TO CONTROL BOARD CN801
(See page 59.) ❿ TO CONTROL BOARD CN802
S791 LIMIT IN
IC302
IC304
IC305
IC706
IC707
CN301
CN302
CN304
CN305
CN306
CN701
CN702
CN703
CN705
CN708
Q101
Q103
Q104
Q106
Q204
Q205
Q206
Q301
Q302
Q303
Q304
Q305
Q701
Q703
Q704
Q705
Q706
Q707
Q708
Q709
Q710
Q711
Q712
D301
D704
D705
D706
D707
XF701
TP703
TP701
TP702
T301
RV101
RV102
RV103
RV201
RV202
RV203
RV301 BASS
RV302 TREBLE
RV701
RV702
RV703
RV704
1-635-079-
12
[CD MOTOR BOARD] -CONDUCTOR SIDE-
M701 SLED MOTOR
M702 SPINDLE MOTOR
CN791
CN792
CN793
CN794
Q791
RV791
RV792
(GND)
(RF OUT)
(ASY)
1-635-078-
HRP101 REC/PB/ERASE HEAD
BRN
GRN
BLK
RED
WHT
YEL
OPTICAL PICK-UP (KSS-224A)

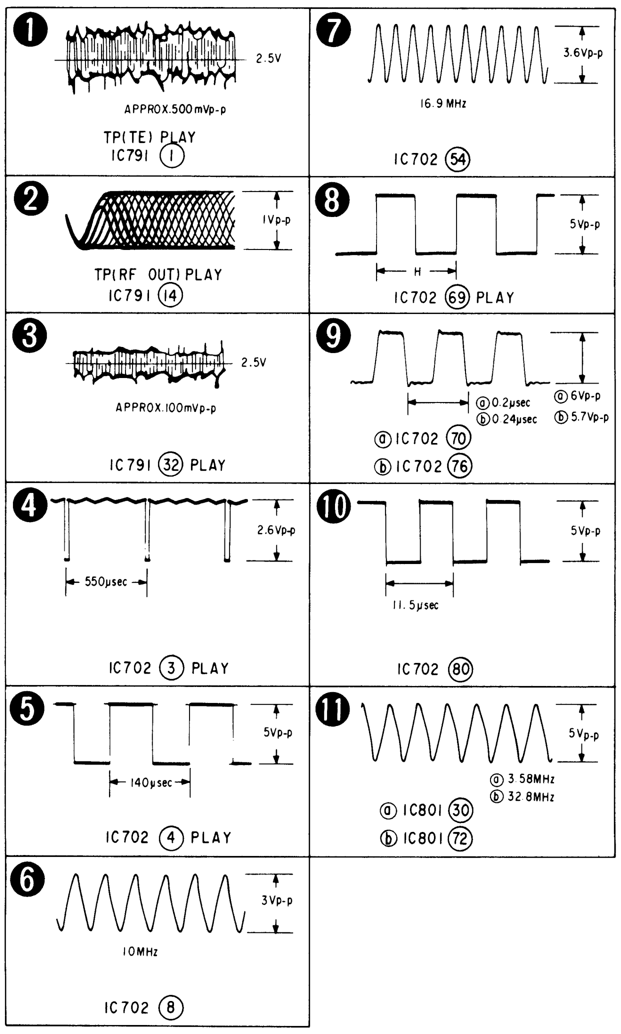
7-5. SCHEMATIC DIAGRAM — AUDIO/CD SECTION — • Refer to page 74 for IC Block Diagrams.


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
(See page 57.)
TO CONTROL BOARD CN801
9
[CD MOTOR BOARD]
OPTICAL PICK-UP (KSS-224A)
CHASSIS
CN794 12P
RF OUT
2
IC791
CXA1081Q
CD RF AMP
3
1
TE
CN791
CN701
CN704
XLT
SUBQ
DRIC
DATA
HI SPEED DUB
CLK
PEN
RESET
MUTE
SENSE
GFS
SCOR
EMF
ASY
GND
MIRR
FCK
DFCT
LDON
5V
TE
VREF
FE
TP701
VREF
TE-I
TE-O
FE-O
FE-I
C700 0.01
TRACKING GAIN
FOCUS GAIN
FOCUS BIAS
TRAVERSE
Q791 2SB1013-2
Q791 LASER POWER CONTROL
M701 SLED MOTOR
M702 SPINDLE MOTOR
TRACKING COIL
FOCUS COIL
CN793
CN792
CN702
CN703
S791 LIMIT IN
Q707 2SC4177-T1L5
Q706 DTC143TK-T146
Q706,707 MUTE
IC703
NOTCH FILTER
IC703 RC4558N
IC706
MOTOR DRIVE
IC706 BA6294U
IC707
COIL DRIVE
IC707 BA6294U
Q712 SWITCH
Q712 2SD999-T1-CLCK
Q701 REG
Q701 2SC1623-T2L5
D706 MA3062H-TX
D702 MA110-TX
D703 MA110-TW
L704 3.3μH
C760 0.01Y
Q105,205 CD HI EQ SWITCH
Q301 DTC114YK SWITCH
[AUDIO-CD BOARD]
IC301
SWITCH
IC301 μPC1330OR
HRP101 REC/PB/ERASE HEAD
R-CH
L-CH
ERASE
CN301
TO CONTROL BOARD CN354
7
(See page 56.)
BIAS
GND
GND
CN302
IC302
PB PRE AMP
IC302 BA328
IN-1
NF-1
OUT-1
+VCC
GND
OUT-2
NF-2
IN-2
PB LEVEL (R)
REC LEVEL (R)
REC LEVEL (L)
Q101
IC305
REC AMP
IC305 CXA1298AP
REC BIAS (L)
REC BIAS (R)
2-PIN H-HIGH SPEED L-NOR
3-PIN H-CRO2 L-NOR
4-PIN H-ON REC-MUTE L-OFF
Q302 SWITCH
Q302 2SB798
T301 BIAS OSC
Q305 2SD999-T1LK BIAS OSC
Q304 DTC343TK
Q303 DTC114TK
Q303,304 BIAS SWITCH
R322 4.7
04

7
8
9
10
11
12
13
14
15
16
17
18
(See page 57.)
TO CONTROL BOARD CN802
⑩
CN704 12P
TP701
VREF TE-0 TE-I FE-0 FE-I
CN705
F (HI SPEED) BW BTL MUTE (C65V)
TP704
ASY GND
VCO FREE RUN (HIGH SPEED)
VCO FREE-RUN (NORMAL SPEED)
Q709,710 SWITCH
Q708 2SC1623-T2L5 SWITCH
TRACKING GAIN
FOCUS GAIN
EFM
IC701
CXA1182Q-Z
CD SYSTEM SERVO PROCESSOR
IC702
CXD1167Q
CD DIGITAL SIGNAL PROCESSOR
IC703
NOTCH FILTER
IC703 RC4558M
Q706,707 MUTE
Q705 SWITCH
Q704 2SC4177-T1L5 MUTE
Q712 SWITCH
Q701 REG
Q105,205 CD HI EQ SWITCH
IC704
DIGITAL FILTER
IC704 μPD6376
IC705
AUDIO AMP
IC705 M51591FP
Q703 DTA124EK-T146 MUTE
RCH
LCH
TO POWER BOARD CN352
(See page 70.)
CN304
PS302 CCP2E20
PS301 CCP2E10
IC301
SWITCH
IC302
PB PRE AMP
IC303
DOLBY AMP
IC303 CXA1102M
IC304
GEQ VOLUME
IC304 LC7815
IC305
REC AMP
Q101-103,201-203 SWITCH
REC LEVEL(R)
REC LEVEL(L)
PB LEVEL(L)
PB LEVEL(R)
2-PIN H-HIGH SPEED L-NOR SPEED
3-PIN H-CrO2 L-NOR
4-PIN H-ON REC-MUTE L-OFF
DOLBY OUT
CN306
Q302 SWITCH
Q303,304 BIAS SWITCH
Q305 2SD999-T1LK BIAS OSC
BASS
TREBLE
Q104,204 MUTE
IC306
BASS/TREBLE AMP
IC306 (1/2) NJM2100M
Q106,206 DBFB SWITCH
IC307
BUFFER
IC307 (1/2) NJM2100M
TO VOL BOARD CN376
(See page 69.)
CN303
L-CH
GND
R-CH
GND
CN305
RADIO GND
CD-LED
LINE-MUTE
TU-LED
TAPE-SELECTOR
TC-LED
BIAS
TC-H
REC-LED
TU-H
AMS-SIGNAL
CD-H
HIGH-SPEED
RADIO L-CH
REC-MUTE
RADIO R-CH
MUTE
NR-ON/OFF
D.B.F.B
CD+7.5V
CD-GND
PRE.+7.5V
MUTE


IC702
CXD1167Q
CD DIGITAL SIGNAL PROCESSOR
Q711 DTC124EK-T146
Q711 SWITCH
R723 10k
R724 100k
C719 12p CH
C720 12p CH
XF701 16.9344MHz
C4M (4.3218M)
TP703
PLCK
GND
PLCK
WFCK
RFCK
C2F2
C2F1
C1F2
C1F1
GND
C2F1
C1F2
C1F1
APTL
APTR
PSSL
SLOB
XDF
XDO
XLLM
XTAO
XTAI
VSS
RACS
RAWE
RA11
RA10
RA09
RA08
RA07
RA06
RA05
RA04
6 TO POWER BOARD CN352
(See page 70.)
CN304
CCP2E10
304
GEO
LUME
CN305
RADIO GND
CD-LED
LINE-MUTE
TU-LED
TAPE-SELECTOR
TC-LED
BIAS
TC-H
REC-LED
TU-H
AMS-SIGNAL
CD-H
HIGH-SPEED
RADIO L-CH
REC-MUTE
RADIO R-CH
MUTE
NR-ON/OFF
8 TO CONTROL BOARD CN402
(See page 55.)
TO VOL
OARD CN376
ee page 69.)

• Waveforms



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ⊟ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

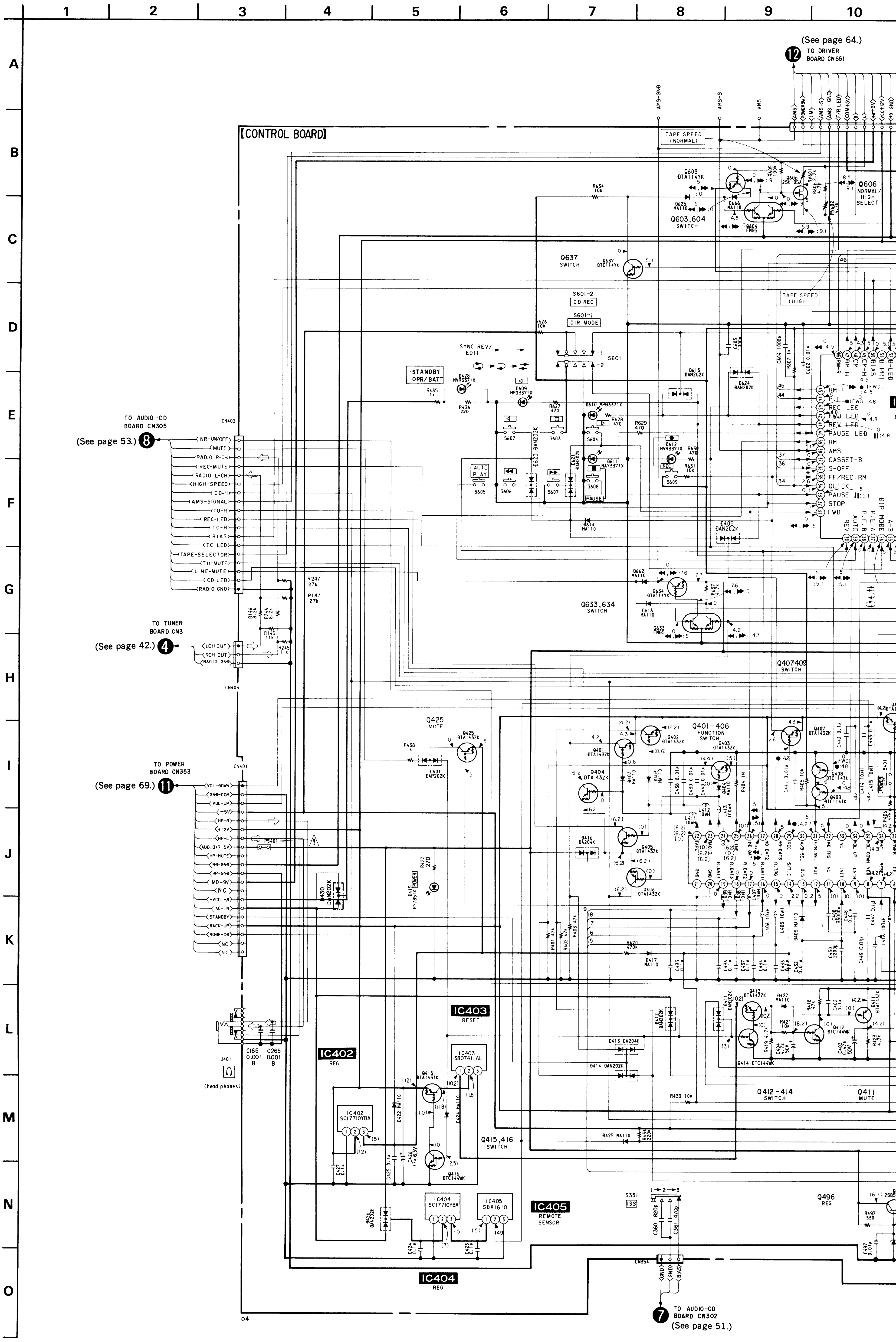
- ▬ : B+ Line
- ☐ : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.

no mark :	CD	<NOR> :	NORMAL TAPE REC (FWD)
( ) :	PB (FWD)	<Cr/M> :	CrO$_2$/METAL TAPE REC (FWD)
< > :	REC (FWD)	▮▮ :	PAUSE
[ ] :	FM		

- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : FM
  - ⇒ : PB
  - ⇒⟩ : REC
  - ⇨ : CD

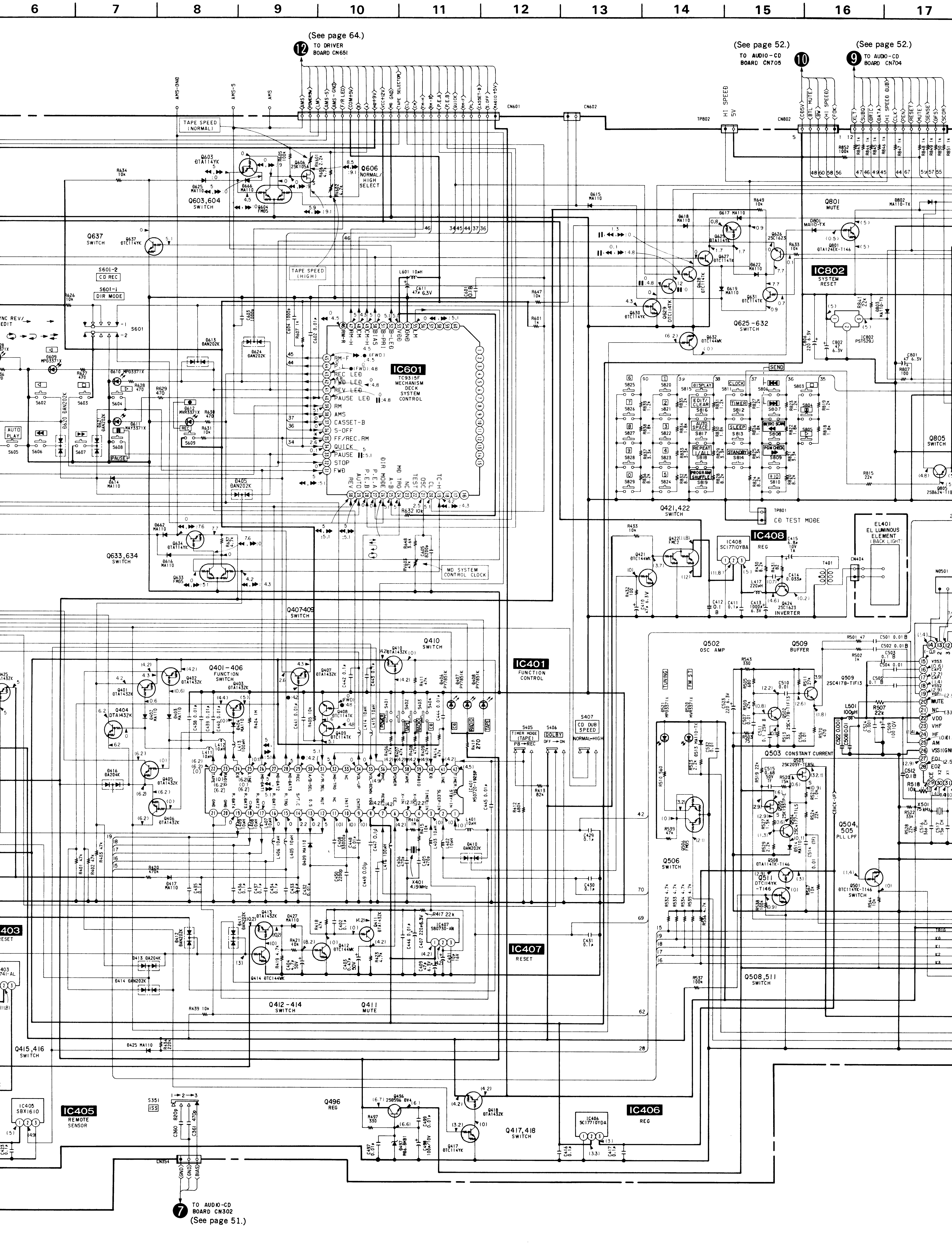
7-6. SCHEMATIC DIAGRAM — SYSTEM CONTROL/DISPLAY SECTION —

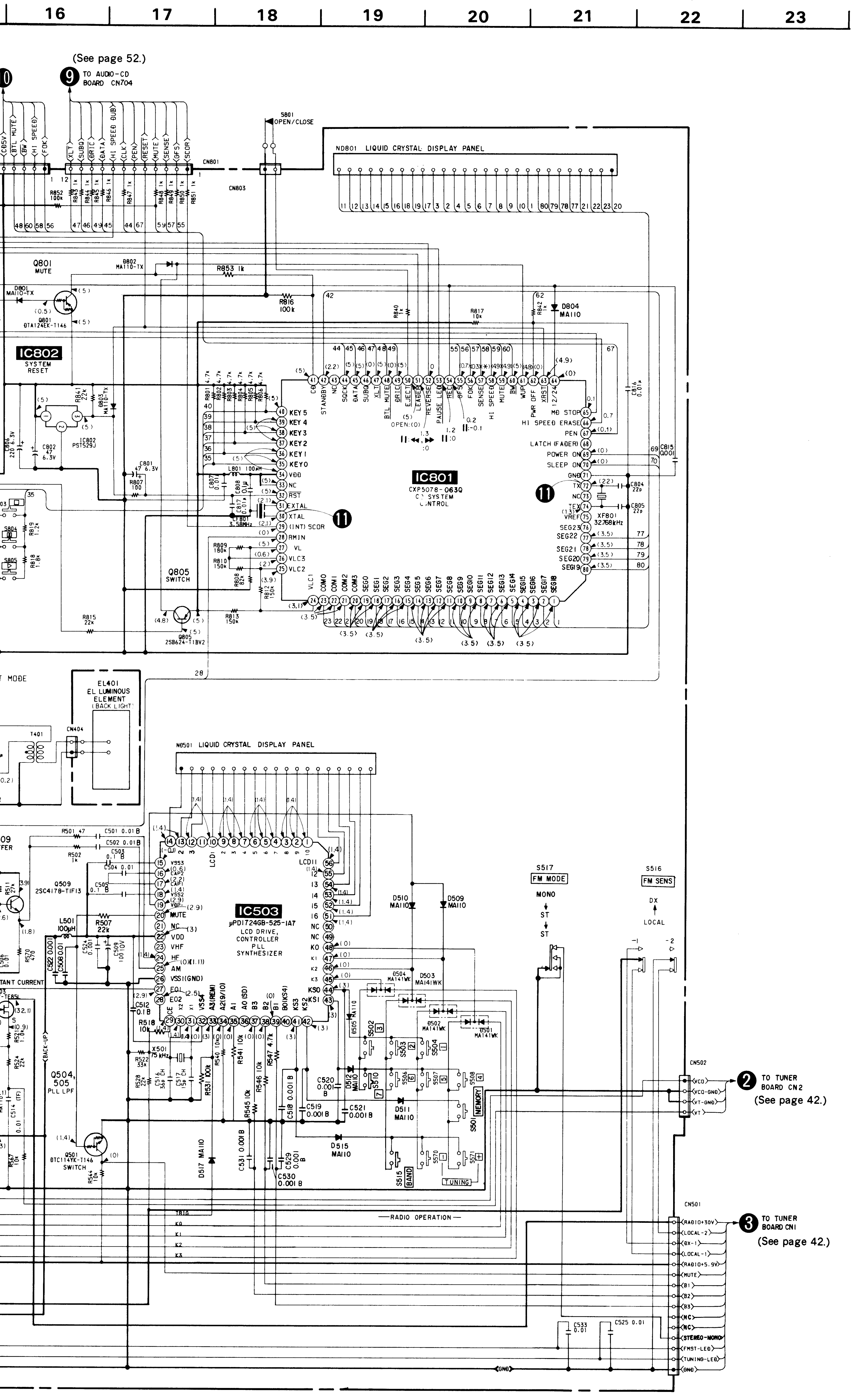
- Refer to page 54 for Waveforms.
- Refer to page 74 for IC Block Diagrams.



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
(See page 64.)
⑫ TO DRIVER BOARD CN651
[CONTROL BOARD]
AMS-GND
AMS-S
AMS
TAPE SPEED (NORMAL)
TAPE SPEED (HIGH)
Q603,604 SWITCH
Q606 NORMAL/HIGH SELECT
Q637 SWITCH
S601-2 CD REC
S601-1 DIR MODE
SYNC REV/EDIT
·STANDBY ·OPR/BATT
TO AUDIO-CD BOARD CN305
(See page 53.) ⑧
CN402
NR-ON/OFF
MUTE
RADIO R-CH
REC-MUTE
RADIO L-CH
HIGH-SPEED
CD-H
AMS-SIGNAL
TU-H
REC-LED
TC-H
BIAS
TC-LED
TAPE-SELECTOR
TU-MUTE
LINE-MUTE
CD-LED
RADIO GND
AUTO PLAY
PAUSE
REC
Q633,634 SWITCH
TO TUNER BOARD CN3
(See page 42.) ④
LCH OUT
RCH OUT
RADIO GND
CN403
Q407-409 SWITCH
Q425 MUTE
Q401-406 FUNCTION SWITCH
TO POWER BOARD CN353
(See page 69.) ⑪
CN401
VOL-DOWN
GND-COM
VOL-UP
+5V
HP-R
+12V
HP-L
AUDIO+7.5V
HP-MUTE
MD-GND
HP-GND
MD+9V
NC
+VCC +B
AC-IN
STANDBY
BACK-UP
MODE-CD
NC
NC
PS401
D415 PY7851K POWER
J401 (head phones)
C165 0.001 B
C265 0.001 B
IC403 RESET
IC403 S80741-AL
IC402 REG
IC402 SC1771OYBA
Q415,416 SWITCH
Q412-414 SWITCH
Q411 MUTE
IC404 SC1771OYBA
IC405 SBX1610
IC405 REMOTE SENSOR
IC404 REG
S351 ISS
Q496 REG
CN354
GND
GND
BIAS
⑦ TO AUDIO-CD BOARD CN302
(See page 51.)
RM-F
REC LED
FWD LED
REV LED
PAUSE LED
RM
AMS
CASSET-B
S-OFF
FF/REC.RM
QUICK
PAUSE
STOP
FWD
DIR MODE
A-B
P.E.A
AUTO
REV

er to page 54 for Waveforms.
er to page 74 for IC Block Diagrams.

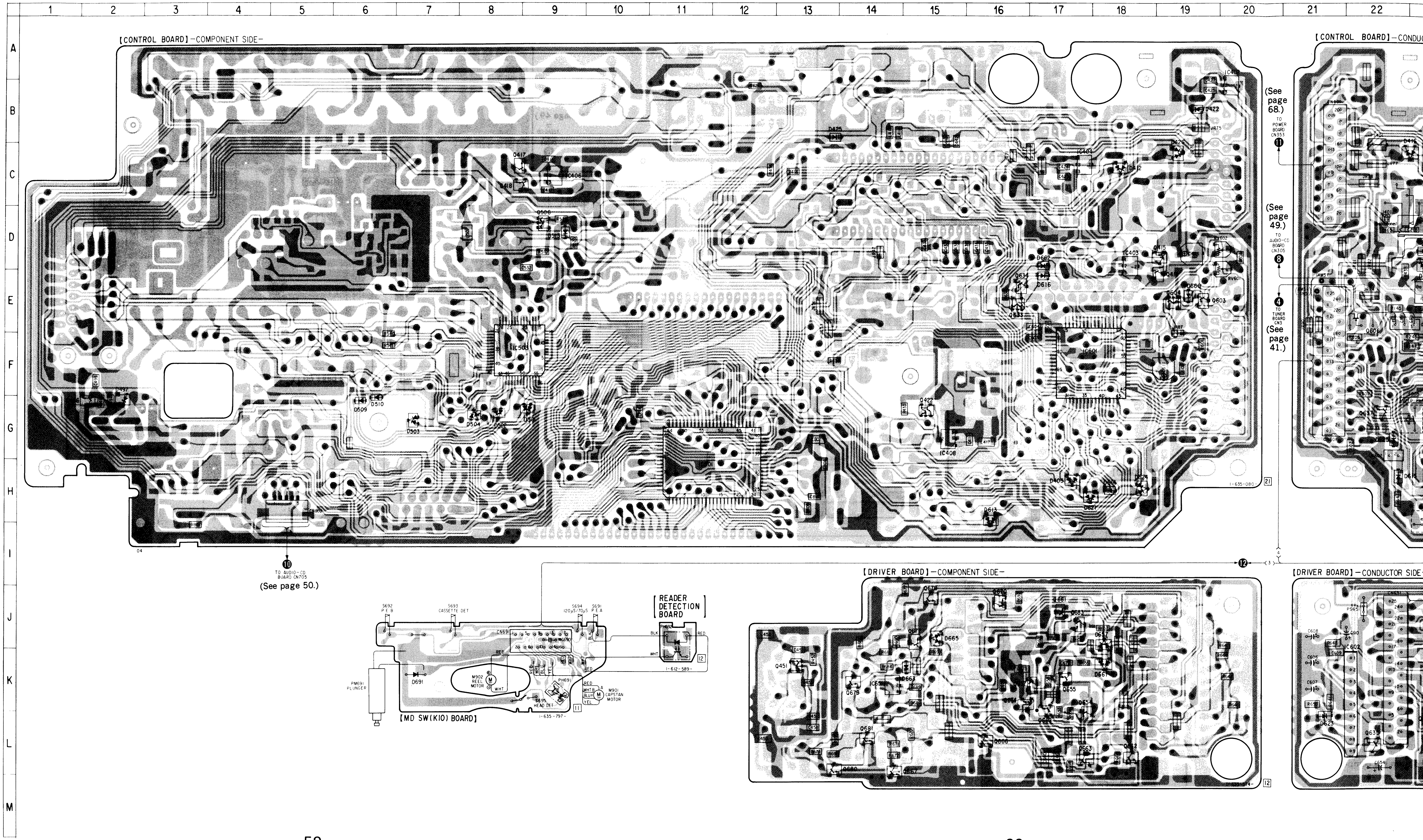

6
7
8
9
10
11
12
13
14
15
16
17
(See page 64.)
⑫ TO DRIVER BOARD CN651
(See page 52.)
TO AUDIO-CD BOARD CN705 ⑩
(See page 52.)
⑨ TO AUDIO-CD BOARD CN704
CN601
CN602
CN802
TP802
HI SPEED 5V
TAPE SPEED (NORMAL)
TAPE SPEED (HIGH)
Q603,604 SWITCH
Q606 NORMAL/HIGH SELECT
Q637 SWITCH
S601-2 CD REC
S601-1 DIR MODE
S601
IC601 TC9315F MECHANISM DECK SYSTEM CONTROL
Q625-632 SWITCH
Q801 MUTE
IC802 SYSTEM RESET
IC802 PST529J
Q805 SWITCH
Q633,634 SWITCH
MD SYSTEM CONTROL CLOCK
Q421,422 SWITCH
TP801 CD TEST MODE
IC408 SCI7710YBA REG
IC408
Q424 2SC1623 INVERTER
EL401 EL LUMINOUS ELEMENT (BACK LIGHT)
CN404
Q407-409 SWITCH
Q410 SWITCH
Q401-406 FUNCTION SWITCH
IC401 FUNCTION CONTROL
IC401 M50720-192SP
S405 TIMER MODE (TAPE) PB→REC
S406 DOLBY OFF→ON
S407 CD DUB SPEED NORMAL↔HIGH
X401 4.19MHz
Q502 OSC AMP
Q509 BUFFER
Q509 2SC4178-T1F13
Q503 CONSTANT CURRENT
Q504,505 PLL LPF
X501 75kHz
Q506 SWITCH
Q501 SWITCH
Q508,511 SWITCH
IC403 RESET
Q412-414 SWITCH
Q411 MUTE
IC407 RESET
IC407 S80730-AN
Q415,416 SWITCH
IC405 SBX1610
IC405 REMOTE SENSOR
S351 ISS
CN354
⑦ TO AUDIO-CD BOARD CN302 (See page 51.)
Q496 REG
Q417,418 SWITCH
IC406 SCI7710YDA
IC406 REG

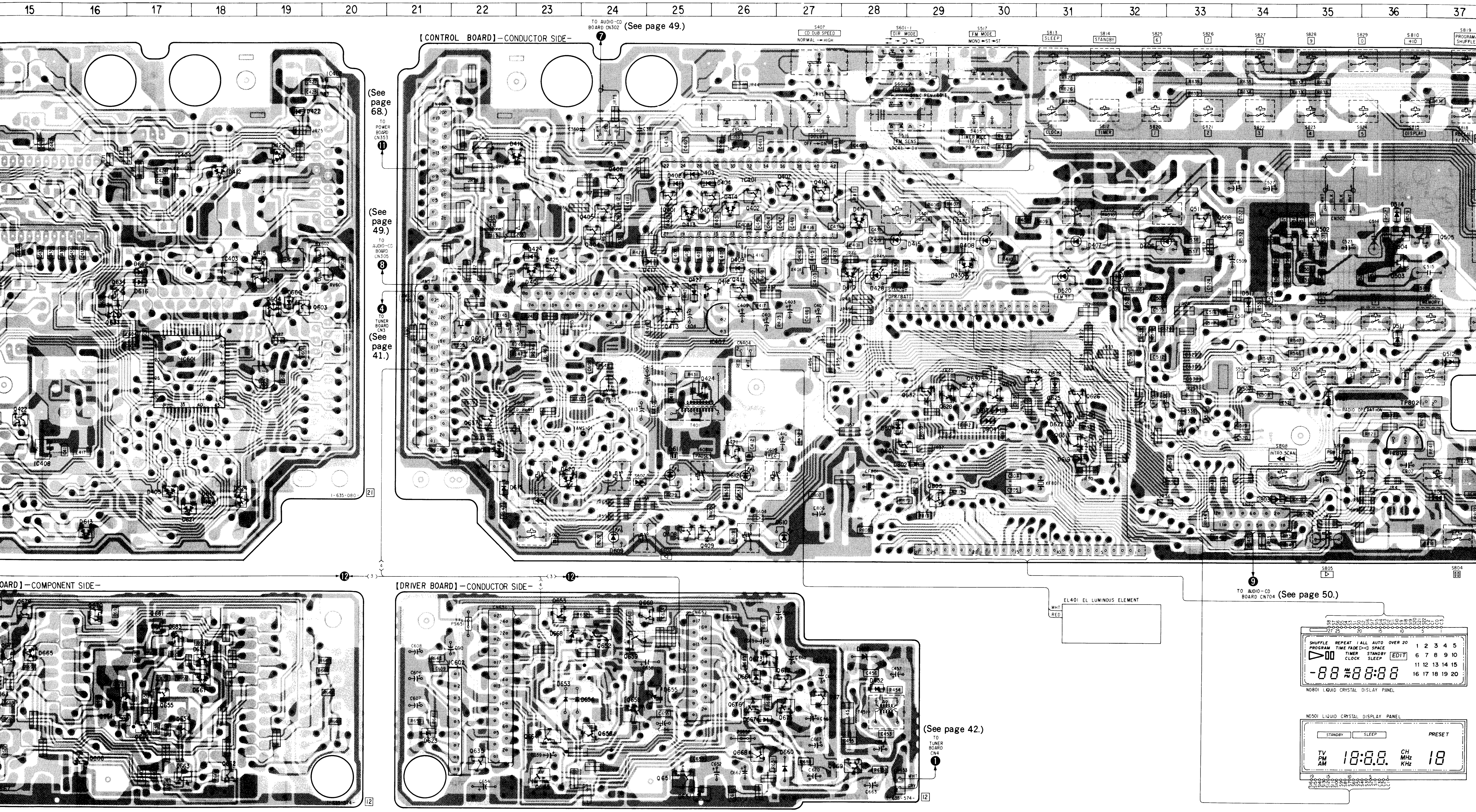

16
17
18
19
20
21
22
23
(See page 52.)
9 TO AUDIO-CD BOARD CN704
S801 OPEN/CLOSE
CN801
CN803
ND801 LIQUID CRYSTAL DISPLAY PANEL
Q801 MUTE
D802 MA110-TX
R853 1k
D801 MA110-TX
Q801 DTA124EK-T146
R816 100k
R817 10k
D804 MA110
IC802 SYSTEM RESET
IC802 PST529J
IC801 CXP5078-063Q SYSTEM CONTROL
XF801 32.768kHz
Q805 SWITCH
Q805 2SB624-T1BV2
R815 22k
R813 150k
EL401 EL LUMINOUS ELEMENT (BACK LIGHT)
T401
CN404
N0501 LIQUID CRYSTAL DISPLAY PANEL
IC503 μPD1724GB-525-1A7 LCD DRIVE, CONTROLLER PLL SYNTHESIZER
Q509 2SC4178-T1F13
L501 100μH
R507 22k
X501 75kHz
Q504, 505 PLL LPF
Q501 DTC114TK-T146 SWITCH
D517 MA110
D510 MA110
D509 MA110
D515 MA110
D511 MA110
D512 MA110
D503 MA141WK
D504 MA141WK
D502 MA141WK
D501 MA141WK
S517 FM MODE MONO ST ST
S516 FM SENS DX LOCAL
S515 BAND
S501 MEMORY
TUNING
RADIO OPERATION
CN502
2 TO TUNER BOARD CN2 (See page 42.)
CN501
3 TO TUNER BOARD CN1 (See page 42.)
C533 0.01
C525 0.01

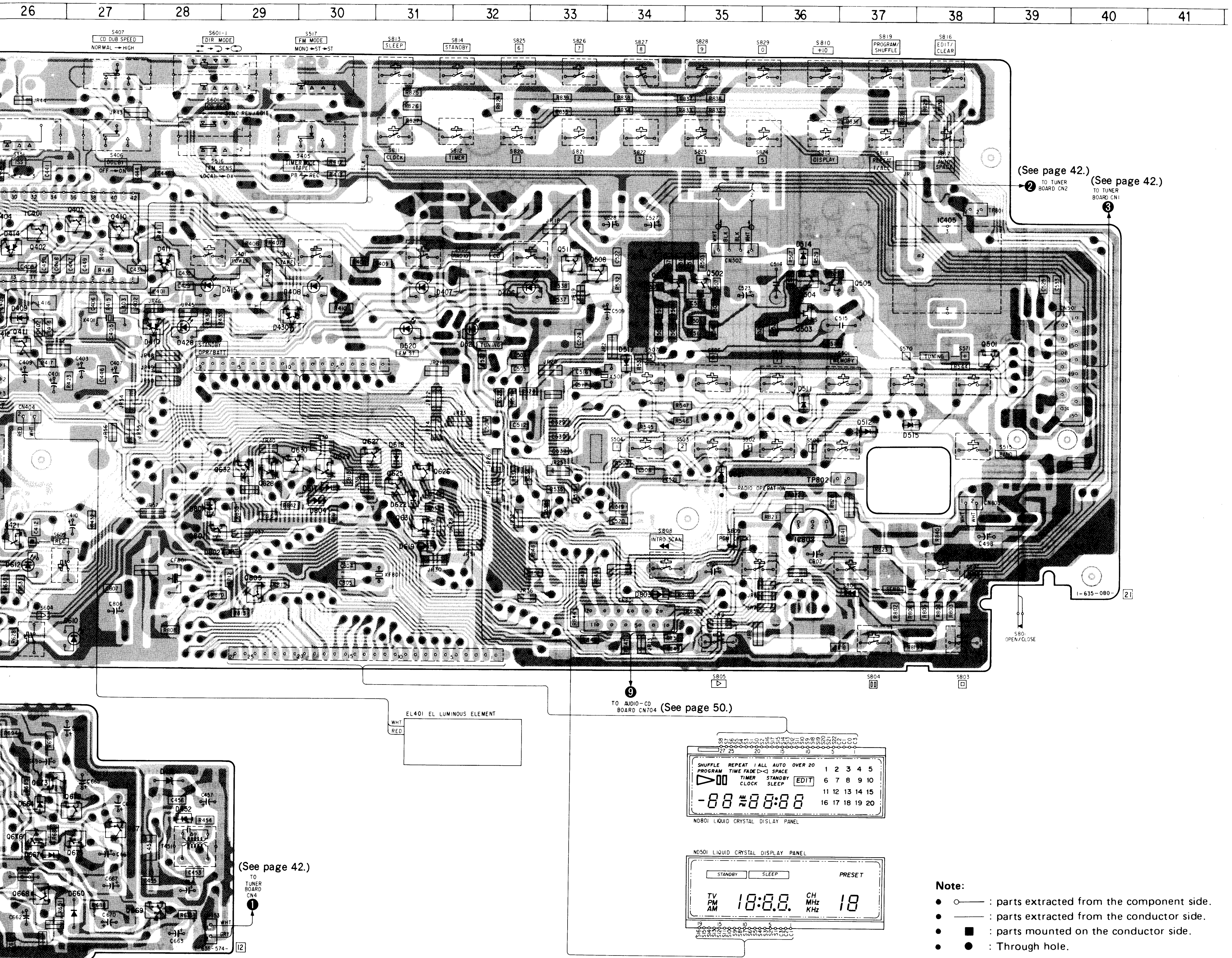
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- ▬ : B+ Line
- ☐ : adjustment for repair.
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB (FWD)   (( )) : AM
  ( ) : FM   ✱ : impossible measure point
  < > : CD   OPEN : CD LID OPEN
  [ ] : TAPE
- ◀ : REV   ▮▮ : PAUSE
  ▶▶ : FF   ◀◀ : REW   ● : REC
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM

7-7. PRINTED WIRING BOARDS — SYSTEM CONTROL/DISPLAY/DRIVER/DECK SECTION — • Refer to page 71 for Semiconductor Lead Layouts.


[CONTROL BOARD] -COMPONENT SIDE-
[CONTROL BOARD] -CONDUC
IC503
IC601
IC406
IC403
IC404
IC408
1-635-080-
(See page 68.)
TO POWER BOARD CN353
⑪
(See page 49.)
TO AUDIO-CD BOARD CN305
⑧
④
TO TUNER BOARD CN3
(See page 41.)
⑩
TO AUDIO-CD BOARD CN705
(See page 50.)
⑫
[DRIVER BOARD] -COMPONENT SIDE-
[DRIVER BOARD] -CONDUCTOR SIDE-
IC602
S692 P.E.B
S693 CASSETTE DET
S694 120μS/70μS
S691 P.E.A
CN691
C690
[READER DETECTION BOARD]
PH692
BLK
RED
WHT
1-612-589-
PM691 PLUNGER
D691
M902 REEL MOTOR
PH691
S695 HEAD DET
M901 CAPSTAN MOTOR
1-635-797-
[MD SW(K10) BOARD]
A
B
C
D
E
F
G
H
I
J
K
L
M
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
[CONTROL BOARD] - CONDUCTOR SIDE -
TO AUDIO-CD BOARD CN302 (See page 49.)
(See page 68.) TO POWER BOARD CN353
(See page 49.) TO AUDIO-CD BOARD CN305
TO TUNER BOARD CN3 (See page 41.)
S407 CD DUB SPEED NORMAL → HIGH
S601-1 DIR MODE
S517 FM MODE MONO ⇄ ST → ST
S813 SLEEP
S814 STANDBY
S825 6
S826 7
S827 8
S828 9
S829 0
S810 +10
S819 PROGRAM SHUFFLE
S406 DOLBY OFF → ON
S516 FM SENS LOCAL → DX
S405 TIMER MODE (TAPE) PB → REC
S811 CLOCK
S812 TIMER
S820 1
S821 2
S822 3
S823 4
S824 5
S815 DISPLAY
STANDBY OPR/BATT
S801 MEMORY
S806 TUNING
S808 INTRO SCAN
RADIO OPERATION
TP802
S609 REC
S611 PAUSE
IC401
IC601
IC408
1-635-080-
S805
S804
TO AUDIO-CD BOARD CN704 (See page 50.)
EL401 EL LUMINOUS ELEMENT
WHT
RED
OARD] - COMPONENT SIDE -
[DRIVER BOARD] - CONDUCTOR SIDE -
(See page 42.) TO TUNER BOARD CN4
SHUFFLE REPEAT 1 ALL AUTO OVER 20
PROGRAM TIME FADE SPACE
TIMER STANDBY EDIT
CLOCK SLEEP
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
ND801 LIQUID CRYSTAL DISLAY PANEL
ND501 LIQUID CRYSTAL DISPLAY PANEL
STANDBY SLEEP PRESET
TV PM AM 18:8.8. CH MHz KHz 18


26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
S407 CD DUB SPEED NORMAL ↔ HIGH
S601-1 DIR MODE
S517 FM MODE MONO ↔ ST ↔ ST
S813 SLEEP
S814 STANDBY
S825 6
S826 7
S827 8
S828 9
S829 0
S810 +10
S819 PROGRAM/SHUFFLE
S816 EDIT/CLEAR
S406 OFF ↔ ON
S516 FM SENS LOCAL ↔ DX
S405 TIMER MODE (TAPE) PB ↔ REC
S811 CLOCK
S812 TIMER
S820 1
S821 2
S822 3
S823 4
S824 5
S815 DISPLAY
S818 REPEAT 1/ALL
S817 AUTO SPACE
(See page 42.) TO TUNER BOARD CN2 ❷
(See page 42.) TO TUNER BOARD CN1 ❸
IC401
IC405
CN501
S570 TUNING
S571
S505 MEMORY
RADIO OPERATION
TP802
S808 INTRO SCAN
S801 OPEN/CLOSE
1-635-080- 21
S805 ▷
S804 ⏸
S803 □
❾ TO AUDIO-CD BOARD CN704 (See page 50.)
EL401 EL LUMINOUS ELEMENT
WHT
RED
SHUFFLE REPEAT 1 ALL AUTO OVER 20
PROGRAM TIME FADE SPACE
TIMER STANDBY EDIT
CLOCK SLEEP
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
ND801 LIQUID CRYSTAL DISPLAY PANEL
ND501 LIQUID CRYSTAL DISPLAY PANEL
STANDBY
SLEEP
PRESET
TV
PM
AM
CH
MHz
KHz
18
(See page 42.) TO TUNER BOARD CN4 ❶
1-635-574- 12

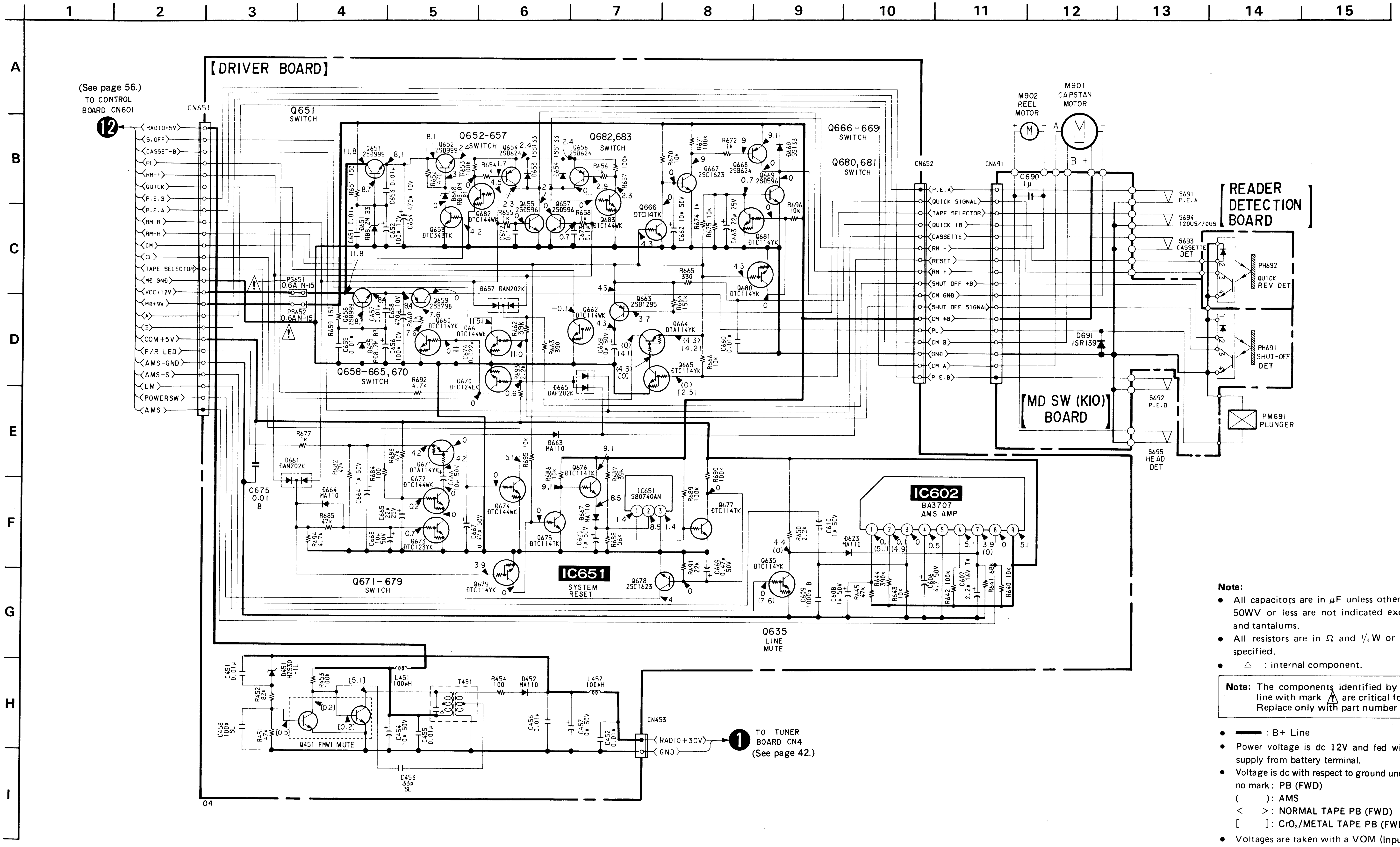
Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D401	D-23	D661	K-18	Q625	G-31
D402	C-25	D662	E-16	Q626	F-31
D403	C-25	D663	K-14	Q627	F-30
D404	C-25	D664	K-26	Q628	F-29
D405	H-17	D665	J-15	Q629	F-30
D406	D-32	D666	E-19	Q630	F-30
D407	D-31	D667	K-26	Q631	G-31
D408	D-30	D668	J-23	Q632	F-29
D409	D-26	D691	K-7	Q633	E-16
D410	E-28	D801	G-28	Q634	E-16
D411	D-28	D802	G-28	Q635	L-22
D412	C-18	D803	H-34	Q637	G-22
D413	C-25	D804	G-30	Q651	L-25
D414	C-26			Q652	J-24
D415	D-28	IC401	C-26	Q653	J-23
D416	C-22	IC402	B-20	Q654	L-18
D417	D-25	IC403	D-18	Q655	L-17
D422	B-19	IC404	C-17	Q656	L-24
D424	D-23	IC405	C-38	Q657	K-17
D425	B-13	IC406	C-9	Q658	K-24
D426	C-19	IC407	E-26	Q659	J-24
D427	E-25	IC408	G-15	Q660	J-24
D428	E-28	IC503	F-8	Q661	J-17
D430	D-29	IC601	F-17	Q662	L-18
D451	J-28	IC602	K-22	Q663	L-17
D452	K-28	IC651	K-14	Q664	L-23
D497	G-2	IC801	H-11	Q665	L-23
D501	G-9	IC802	G-36	Q666	L-16
D502	G-8			Q667	L-14
D503	G-7	Q401	C-25	Q668	L-26
D504	G-8	Q402	C-26	Q669	L-28
D505	F-35	Q403	C-25	Q670	J-16
D509	G-6	Q404	D-24	Q671	K-27
D510	G-6	Q405	D-24	Q672	K-27
D511	E-36	Q406	C-24	Q673	J-26
D512	F-37	Q407	C-27	Q674	K-16
D513	D-9	Q408	H-25	Q675	K-27
D514	D-36	Q409	H-25	Q676	K-26
D515	F-37	Q410	C-27	Q677	J-15
D517	E-34	Q411	E-26	Q678	J-15
D520	E-31	Q412	E-25	Q679	K-14
D521	E-32	Q413	E-25	Q680	L-13
D609	H-24	Q414	E-25	Q681	L-14
D610	H-26	Q415	D-18	Q682	K-16
D611	G-25	Q416	D-18	Q683	J-17
D612	G-26	Q417	C-8	Q801	G-28
D613	H-16	Q418	C-8	Q805	H-29
D614	H-18	Q421	G-26		
D615	H-22	Q422	G-15		
D616	E-16	Q424	F-25		
D617	G-30	Q425	D-23		
D618	F-31	Q451	K-13		
D619	G-31	Q496	G-2		
D620	H-23	Q501	E-38		
D621	H-17	Q502	D-35		
D622	G-31	Q503	D-36		
D623	L-21	Q504	D-36		
D624	H-18	Q505	D-36		
D625	G-22	Q506	D-9		
D651	L-25	Q508	D-33		
D653	K-23	Q509	D-34		
D654	K-23	Q511	D-33		
D655	K-25	Q603	E-19		
D657	K-18	Q604	E-19		
D660	L-27	Q606	E-22		

7-8. SCHEMATIC DIAGRAM — DRIVER/DECK SECTION — • Refer to page 74 for IC Block Diagrams.

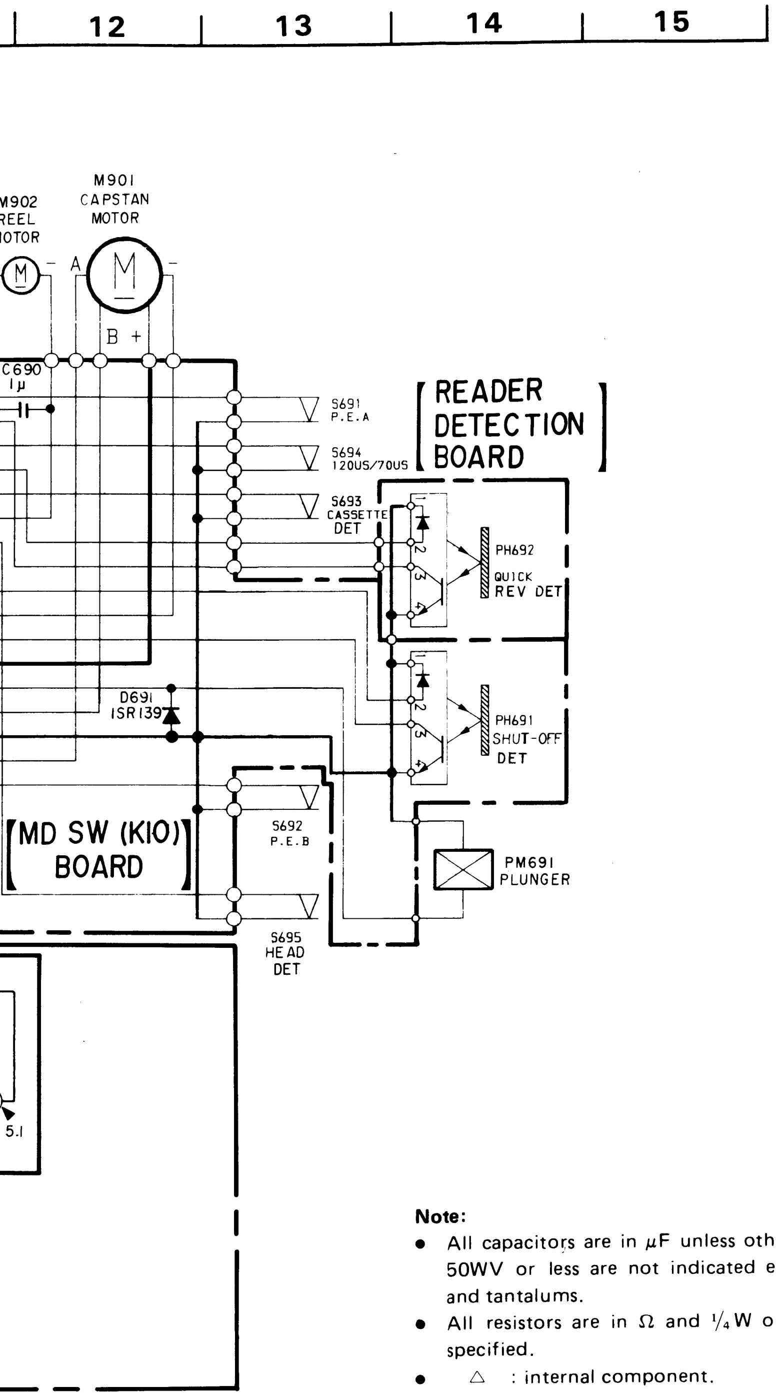

[DRIVER BOARD]
(See page 56.) TO CONTROL BOARD CN601
CN651
RADIO+5V
S.OFF
CASSET-B
PL
RM-F
QUICK
P.E.B
P.E.A
RM-R
RM-H
CM
CL
TAPE SELECTOR
MD GND
VCC+12V
MD+9V
A
B
COM+5V
F/R LED
AMS-GND
AMS-S
LM
POWERSW
AMS
Q651 SWITCH
Q652-657 SWITCH
Q682,683 SWITCH
Q666-669 SWITCH
Q680,681 SWITCH
Q658-665,670 SWITCH
Q671-679 SWITCH
PS651 0.6A N-15
PS652 0.6AN-15
IC651 S80740AN
IC651 SYSTEM RESET
IC602 BA3707 AMS AMP
Q635 LINE MUTE
Q451 FMW1 MUTE
T451
L451 100μH
L452 100μH
CN453
RADIO+30V
GND
TO TUNER BOARD CN4 (See page 42.)
CN652
CN691
P.E.A
QUICK SIGNAL
TAPE SELECTOR
QUICK +B
CASSETTE
RM -
RESET
RM +
SHUT OFF +B
CM GND
SHUT OFF SIGNAL
CM +B
PL
CM B
GND
CM A
P.E.B
M902 REEL MOTOR
M901 CAPSTAN MOTOR
C690 1μ
D691 ISR139
S691 P.E.A
S694 120US/70US
S693 CASSETTE DET
READER DETECTION BOARD
PH692 QUICK REV DET
PH691 SHUT-OFF DET
[MD SW (K10) BOARD]
S692 P.E.B
S695 HEAD DET
PM691 PLUNGER
04

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ▬ : B+ Line
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark: PB (FWD) ▮▮: PAUSE
  ( ): AMS
  < >: NORMAL TAPE PB (FWD)
  [ ]: CrO_2/METAL TAPE PB (FWD)
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.


12
13
14
15
M902
REEL
MOTOR
M901
CAPSTAN
MOTOR
A
B +
C690
1μ
S691
P.E.A
S694
120US/70US
S693
CASSETTE
DET
READER
DETECTION
BOARD
PH692
QUICK
REV DET
D691
ISR139
PH691
SHUT-OFF
DET
MD SW (K10)
BOARD
S692
P.E.B
PM691
PLUNGER
S695
HEAD
DET
5.1

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : PB (FWD)　　　**II**: PAUSE
  (　　): AMS
  <　　>: NORMAL TAPE PB (FWD)
  [　　]: CrO_2/METAL TAPE PB (FWD)
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

7-9. PRINTED WIRING BOARDS — VOLUME/POWER SECTION —

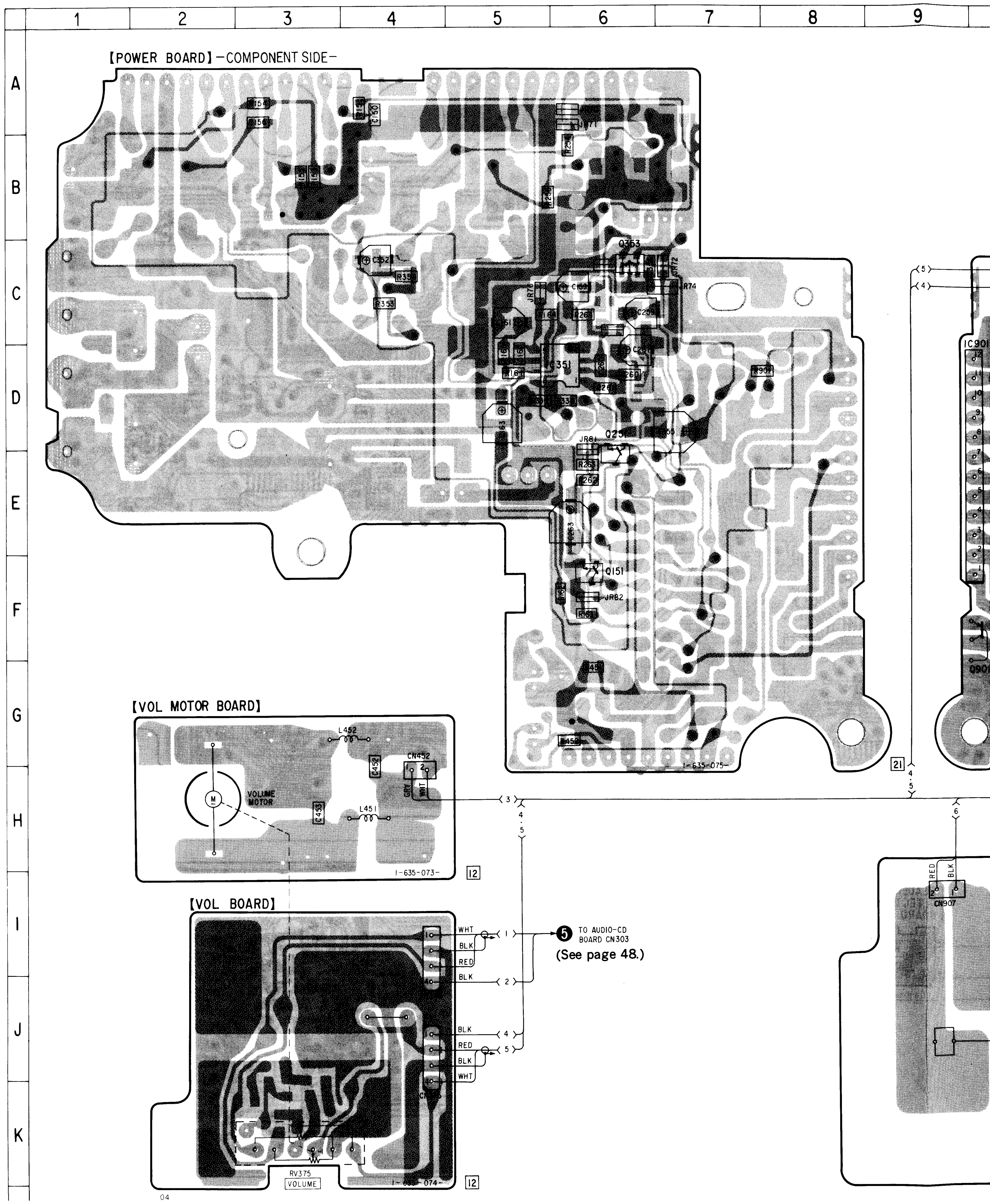
- **Refer to page 71 for Semiconductor Lead Layouts.**

● Semiconductor Location

Ref. No.	Location
D350	C-14
D351	C-11
D901	C-17
D903	F-12
IC151	A-15
IC251	A-12
IC351	D-5
IC451	G-11
IC901	D-9
Q151	F-6
Q251	D-6
Q351	D-11
Q352	C-12
Q353	C-6
Q354	C-12
Q901	F-9

Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side

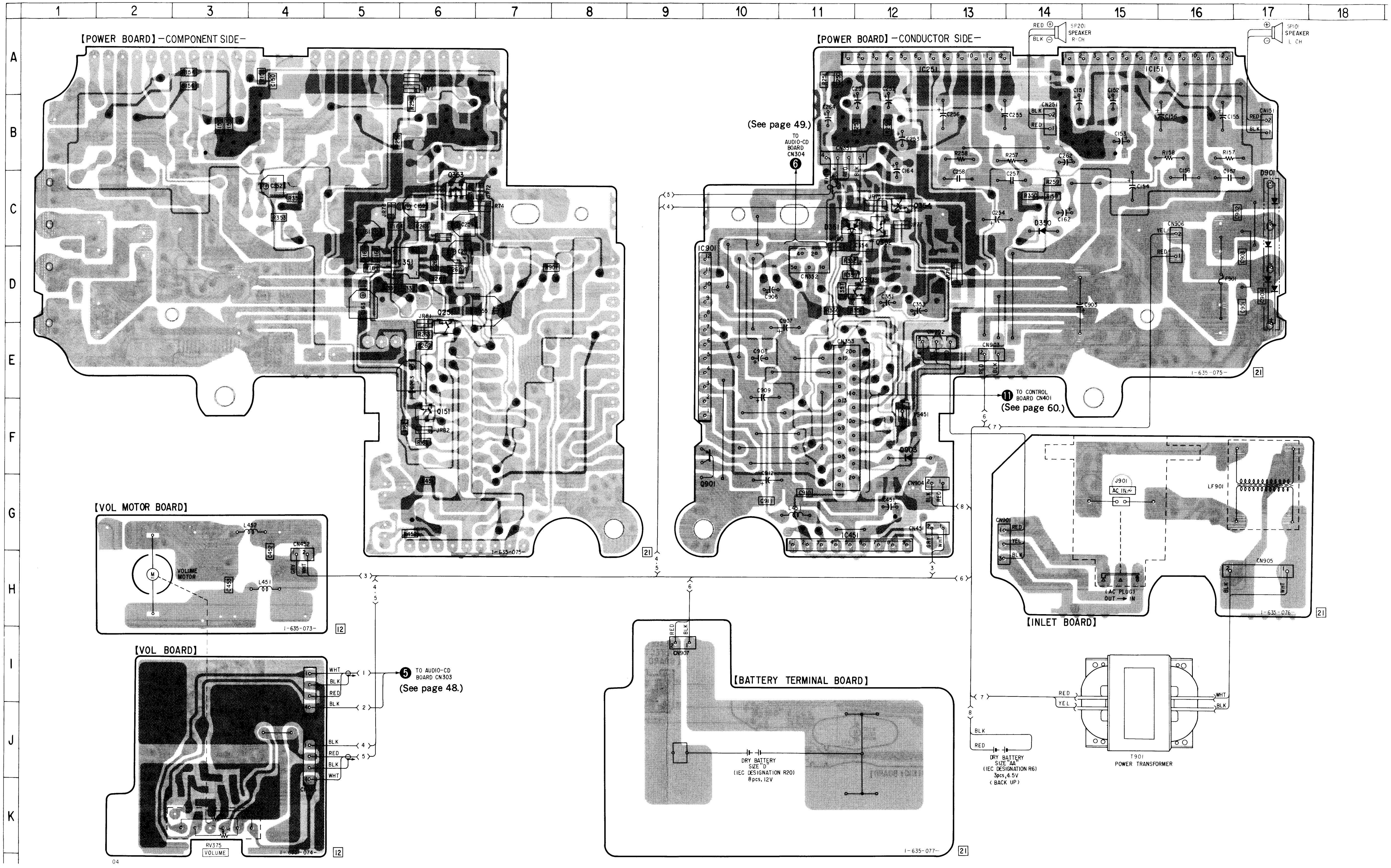

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
K
[POWER BOARD] -COMPONENT SIDE-
Q363
Q351
Q25
Q151
JR81
JR82
R74
1-635-075-
21
[VOL MOTOR BOARD]
VOLUME MOTOR
L452
CN452
L451
GRY
WHT
1-635-073-
12
[VOL BOARD]
WHT
BLK
RED
BLK
BLK
RED
BLK
WHT
RV375
VOLUME
1-635-074-
12
RED
BLK
CN907
IC901
Q901

⑤ TO AUDIO-CD BOARD CN303
(See page 48.)

7-9. PRINTED WIRING BOARDS — VOLUME/POWER SECTION — • Refer to page 71 for Semiconductor Lead Layouts.

emiconductor Location

f. No.	Location
350	C-14
351	C-11
901	C-17
903	F-12
151	A-15
251	A-12
351	D-5
451	G-11
901	D-9
151	F-6
251	D-6
351	D-11
352	C-12
353	C-6
354	C-12
901	F-9



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K
【POWER BOARD】-COMPONENT SIDE-
【POWER BOARD】-CONDUCTOR SIDE-
RED ⊕ BLK ⊖ SP201 SPEAKER R-CH
⊕ ⊖ SP101 SPEAKER L CH
IC251
IC151
(See page 49.)
TO AUDIO-CD BOARD CN304
❻
⓫ TO CONTROL BOARD CN401
(See page 60.)
IC901
CN352
CN353
IC451
Q151
Q251
Q353
D901
F901
1-635-075-
21
【VOL MOTOR BOARD】
VOLUME MOTOR
L452
L451
CN452
1-635-073-
12
【VOL BOARD】
WHT BLK RED BLK
BLK RED BLK WHT
❺ TO AUDIO-CD BOARD CN303
(See page 48.)
RV375 VOLUME
1-635-074-
12
【BATTERY TERMINAL BOARD】
CN907
DRY BATTERY SIZE"D" (IEC DESIGNATION R20) 8pcs, 12V
1-635-077-
21
【INLET BOARD】
J901 AC IN~
LF901
CN901
CN905
(AC PLUG) OUT → IN
1-635-076-
21
RED YEL WHT BLK
T901 POWER TRANSFORMER
BLK RED
DRY BATTERY SIZE"AA" (IEC DESIGNATION R6) 3pcs, 4.5V (BACK UP)
04

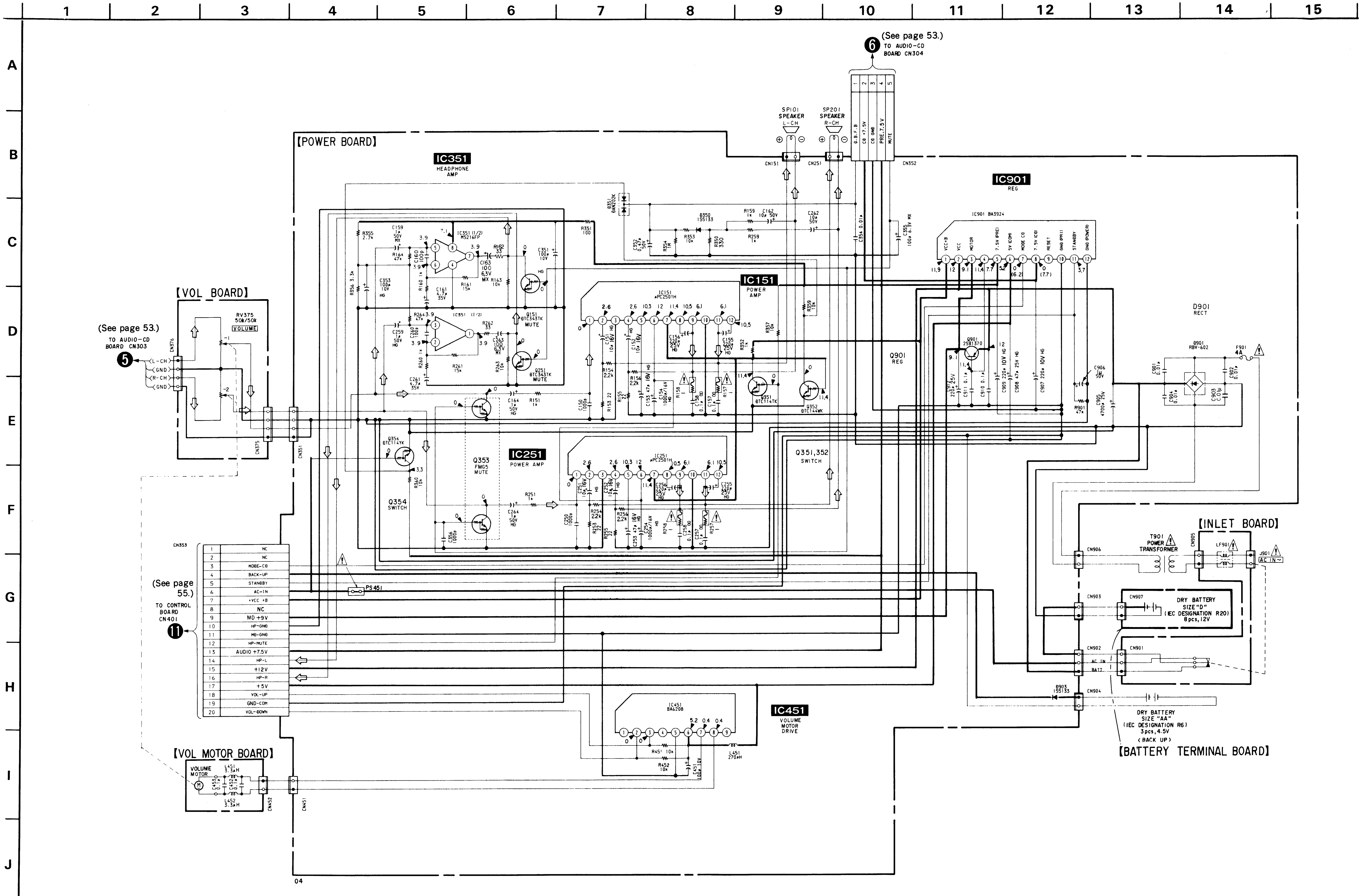
d from the component side.

.

e side which is seen.

rear side

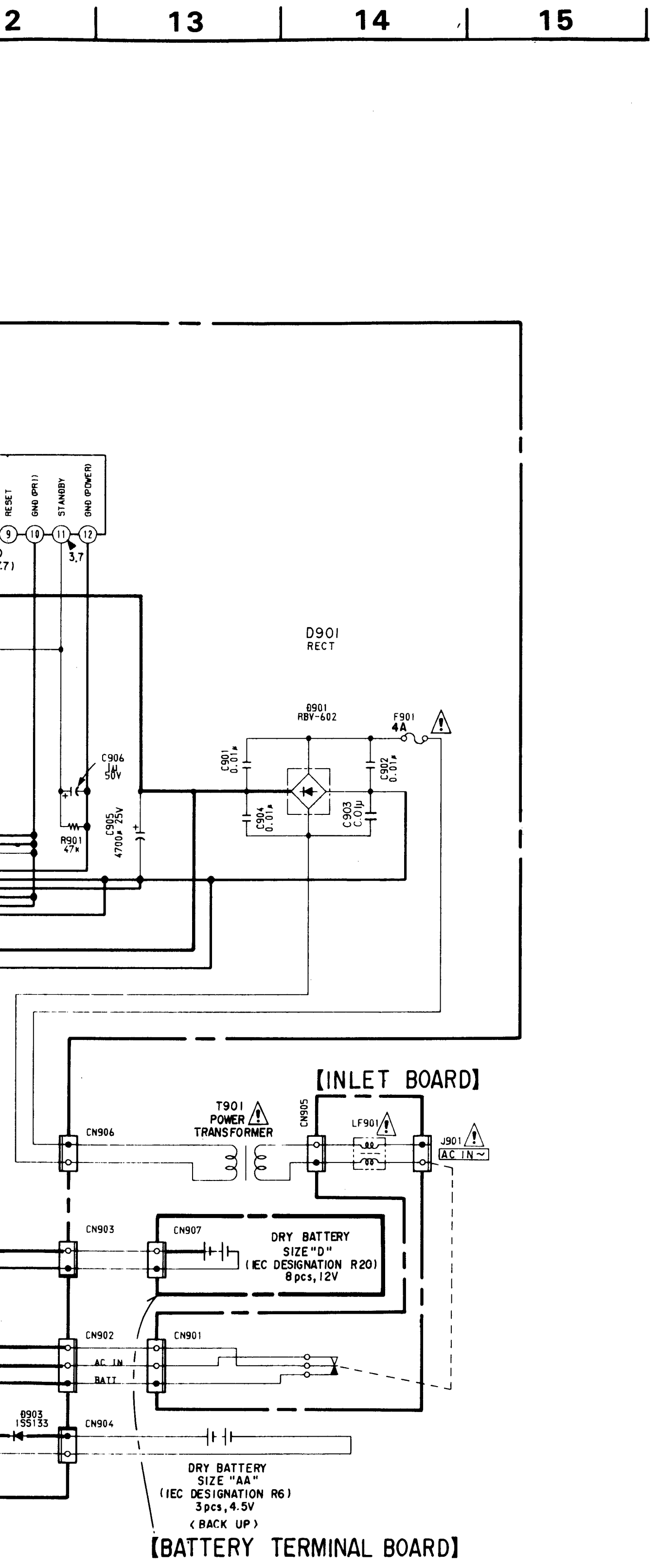
7-10. SCHEMATIC DIAGRAM — VOLUME/POWER SECTION — • Refer to page 74 for IC Block Diagrams.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
[POWER BOARD]
[VOL BOARD]
[VOL MOTOR BOARD]
[INLET BOARD]
[BATTERY TERMINAL BOARD]
IC351
HEADPHONE AMP
IC351 (1/2) M5216FP
IC351 (2/2)
IC151
POWER AMP
IC151 μPC2501H
IC251
POWER AMP
IC251 μPC2501H
IC451
VOLUME MOTOR DRIVE
IC451 BA6208
IC901
REG
IC901 BA3924
Q901
REG
Q901 2SB1370
Q151 DTC343TK
MUTE
Q251 DTC343TK
MUTE
Q351 DTC114TK
Q352 DTC144WK
Q351,352
SWITCH
Q353
FMG5
MUTE
Q354 DTC114YK
Q354
SWITCH
D901
RECT
D901 RBV-602
D351 DAN202K
D350 1SS133
D903 1SS133
F901 4A
T901 POWER TRANSFORMER
LF901
J901 AC IN~
PS451
RV375 50k/50k VOLUME
SP101 SPEAKER L-CH
SP201 SPEAKER R-CH
(See page 53.)
TO AUDIO-CD BOARD CN304
O.B.F.B
CD +7.5V
CD GND
PRE.7.5V
MUTE
(See page 53.)
TO AUDIO-CD BOARD CN303
L-CH
GND
R-CH
GND
(See page 55.)
TO CONTROL BOARD CN401
CN353
1 NC
2 NC
3 MODE-CD
4 BACK-UP
5 STANDBY
6 AC-IN
7 +VCC +B
8 NC
9 MD +9V
10 HP-GND
11 MD-GND
12 HP-MUTE
13 AUDIO +7.5V
14 HP-L
15 +12V
16 HP-R
17 +5V
18 VOL-UP
19 GND-COM
20 VOL-DOWN
VCC+B
VCC
MOTOR
7.5V (PRE)
5V (CDM)
MODE CD
7.5V (CD)
RESET
GND (PRE)
STANDBY
GND (POWER)
DRY BATTERY SIZE "D" (IEC DESIGNATION R20) 8pcs, 12V
DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 3pcs, 4.5V (BACK UP)
AC IN
BATT
VOLUME MOTOR
L451 3.3μH
L452 3.3μH
L451 270μH
R451 10k
R452 10k
CN151
CN251
CN352
CN375
CN376
CN351
CN451
CN452
CN901
CN902
CN903
CN904
CN905
CN906
CN907
04

Note:
- All capacitors are i
  50WV or less are
  and tantalums.
- All resistors are in
  specified.
- : fusible resi

Note: The compone
line with mark
Replace only

- ▬ : B+ Line
- Power voltage is c
  supply from battery
- Voltage is dc with re
  no mark : FM
  [ ] : CD
- Voltages are taken
  Voltage variations
  tion tolerances.
- Signal path.
  ⇨ : FM


2
13
14
15
RESET
GND (PRI)
STANDBY
GND (POWER)
3,7
D901
RECT
D901
RBV-602
F901
4A
C901
C902
C903
C904
C905
4700μ 25V
C906
1μ
50V
R901
47k
【INLET BOARD】
T901
POWER
TRANSFORMER
CN906
CN905
LF901
J901
AC IN~
CN903
CN907
DRY BATTERY
SIZE "D"
(IEC DESIGNATION R20)
8pcs, 12V
CN902
CN901
AC IN
BATT.
D903
1SS133
CN904
DRY BATTERY
SIZE "AA"
(IEC DESIGNATION R6)
3pcs, 4.5V
(BACK UP)
【BATTERY TERMINAL BOARD】

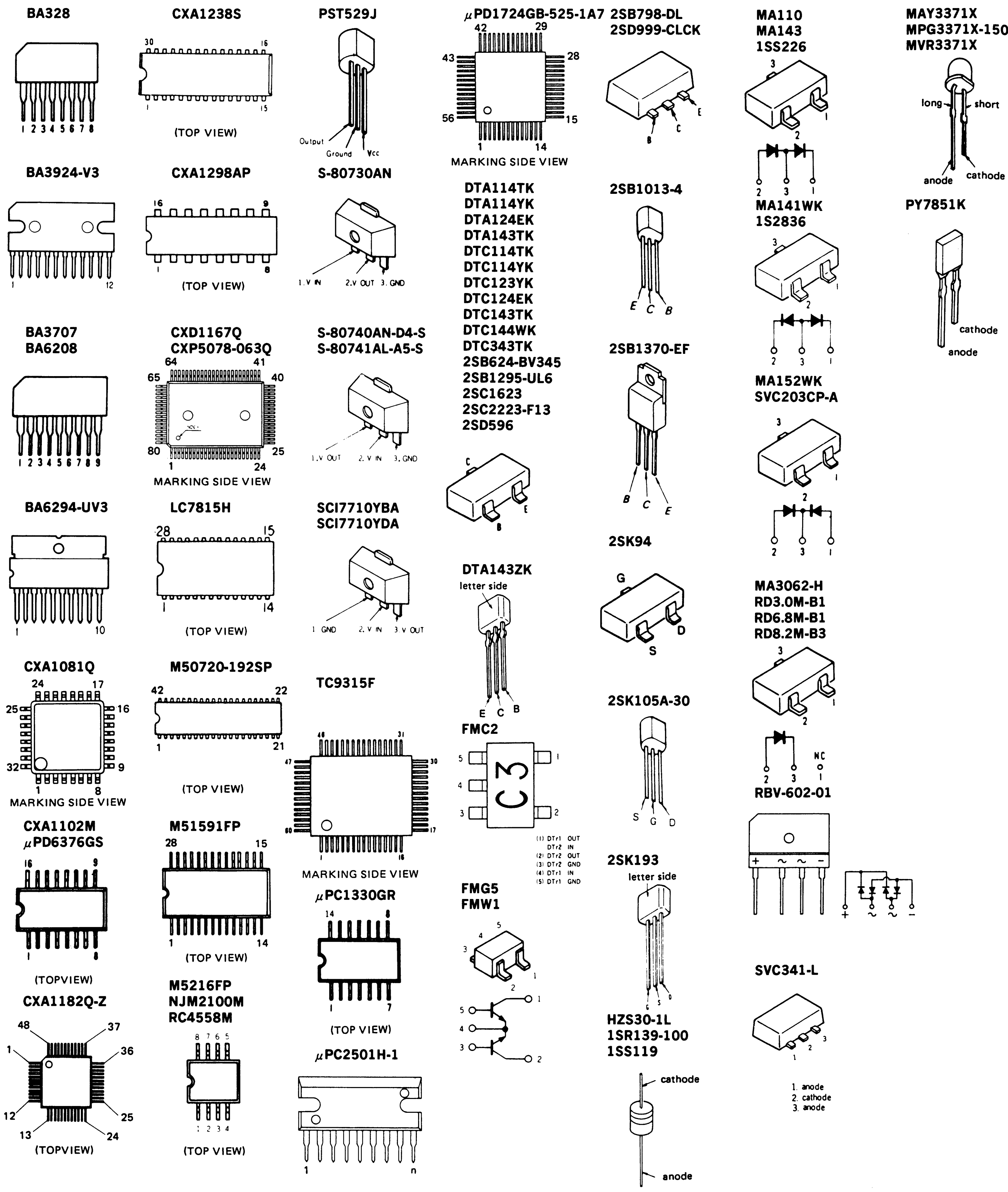
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¹/₄W or less unless otherwise specified.
- ─∿∿─ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

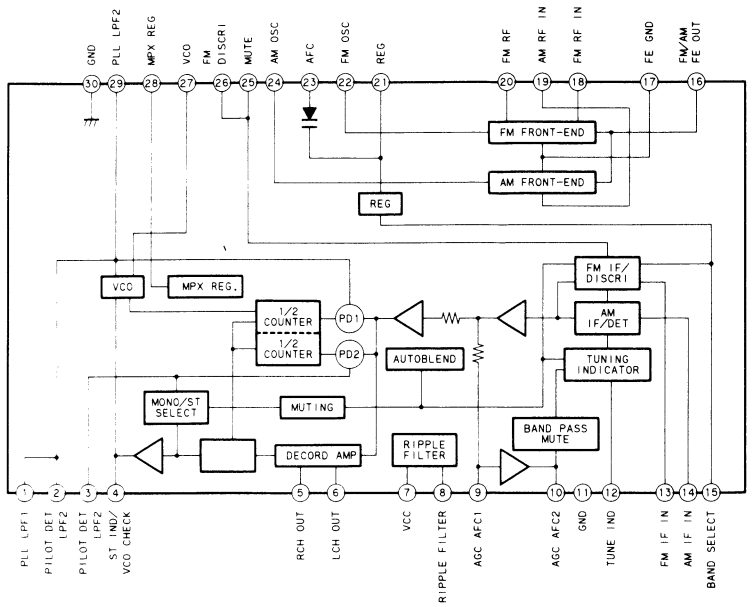
- ▬ : B+ Line
- Power voltage is dc 12V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : FM
  [ ] : CD
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

7-11. SEMICONDUCTOR LEAD LAYOUTS

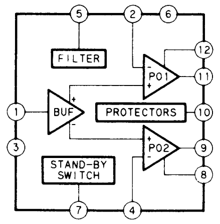

BA328
1 2 3 4 5 6 7 8
CXA1238S
30
16
1
15
(TOP VIEW)
PST529J
Output
Ground
Vcc
μPD1724GB-525-1A7
42
29
43
28
56
15
1
14
MARKING SIDE VIEW
2SB798-DL
2SD999-CLCK
B
C
E
MA110
MA143
1SS226
MAY3371X
MPG3371X-150
MVR3371X
long
short
anode
cathode
BA3924-V3
1
12
CXA1298AP
16
9
1
8
(TOP VIEW)
S-80730AN
1. V IN
2. V OUT
3. GND
DTA114TK
DTA114YK
DTA124EK
DTA143TK
DTC114TK
DTC114YK
DTC123YK
DTC124EK
DTC143TK
DTC144WK
DTC343TK
2SB624-BV345
2SB1295-UL6
2SC1623
2SC2223-F13
2SD596
C
B
E
2SB1013-4
E C B
MA141WK
1S2836
PY7851K
cathode
anode
BA3707
BA6208
1 2 3 4 5 6 7 8 9
CXD1167Q
CXP5078-063Q
64
41
65
40
80
25
1
24
MARKING SIDE VIEW
S-80740AN-D4-S
S-80741AL-A5-S
1. V OUT
2. V IN
3. GND
2SB1370-EF
B C E
MA152WK
SVC203CP-A
BA6294-UV3
1
10
LC7815H
28
15
1
14
(TOP VIEW)
SCI7710YBA
SCI7710YDA
1 GND
2. V IN
3. V OUT
2SK94
G
D
S
DTA143ZK
letter side
E C B
MA3062-H
RD3.0M-B1
RD6.8M-B1
RD8.2M-B3
NC
CXA1081Q
24
17
25
16
32
9
1
8
MARKING SIDE VIEW
M50720-192SP
42
22
1
21
(TOP VIEW)
TC9315F
48
31
47
30
64
17
1
16
MARKING SIDE VIEW
FMC2
C3
(1) DTr1 OUT
DTr2 IN
(2) DTr2 OUT
(3) DTr2 GND
(4) DTr1 IN
(5) DTr1 GND
2SK105A-30
S G D
RBV-602-01
+ ~ ~ -
CXA1102M
μPD6376GS
16
9
1
8
(TOPVIEW)
M51591FP
28
15
1
14
(TOP VIEW)
μPC1330GR
14
8
1
7
(TOP VIEW)
FMG5
FMW1
2SK193
letter side
HZS30-1L
1SR139-100
1SS119
cathode
anode
SVC341-L
1. anode
2. cathode
3. anode
CXA1182Q-Z
48
37
1
36
12
25
13
24
(TOPVIEW)
M5216FP
NJM2100M
RC4558M
8 7 6 5
1 2 3 4
(TOP VIEW)
μPC2501H-1
1
n

- **IC Block Diagrams**

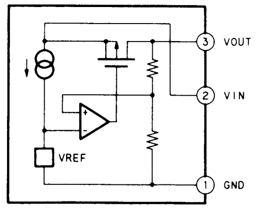
IC1 CXA1238S


GND
PLL LPF2
MPX REG
VCO
FM DISCRI
MUTE
AM OSC
AFC
FM OSC
REG
FM RF
AM RF IN
FM RF IN
FE GND
FM/AM FE OUT
FM FRONT-END
AM FRONT-END
REG
VCC
MPX REG.
1/2 COUNTER
1/2 COUNTER
PD1
PD2
AUTOBLEND
FM IF/DISCRI
AM IF/DET
TUNING INDICATOR
MONO/ST SELECT
MUTING
DECORD AMP
RIPPLE FILTER
BAND PASS MUTE
PLL LPF1
PILOT DET LPF2
PILOT DET LPF2
ST IND/VCO CHECK
RCH OUT
LCH OUT
VCC
RIPPLE FILTER
AGC AFC1
AGC AFC2
GND
TUNE IND
FM IF IN
AM IF IN
BAND SELECT

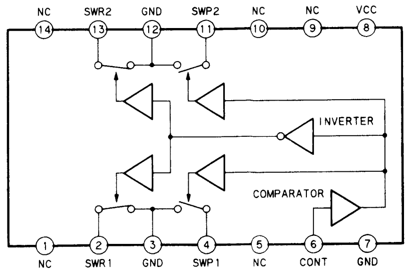
IC151, 251 μPC2501H-1


FILTER
BUF
PO1
PO2
PROTECTORS
STAND-BY SWITCH

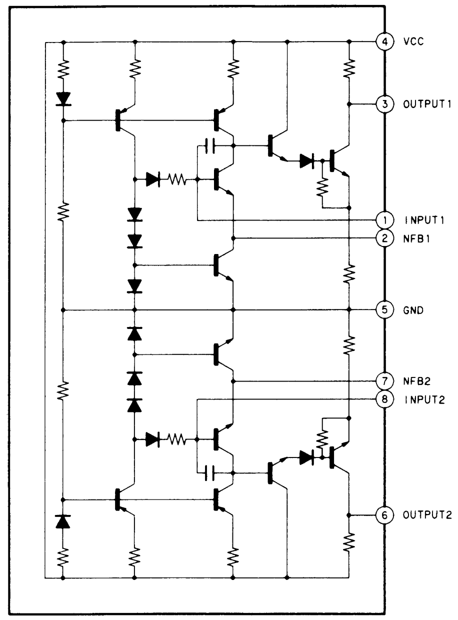
IC402, 404, 408 SCI7710YBA
IC406 SCI7710YDA


VOUT
VIN
GND
VREF

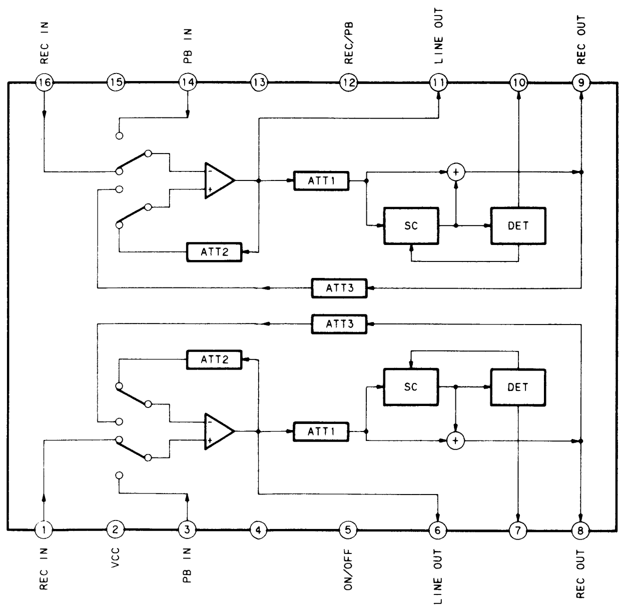
IC301 μPC1330GR


NC
SWR2
GND
SWP2
NC
NC
VCC
INVERTER
COMPARATOR
NC
SWR1
GND
SWP1
NC
CONT
GND

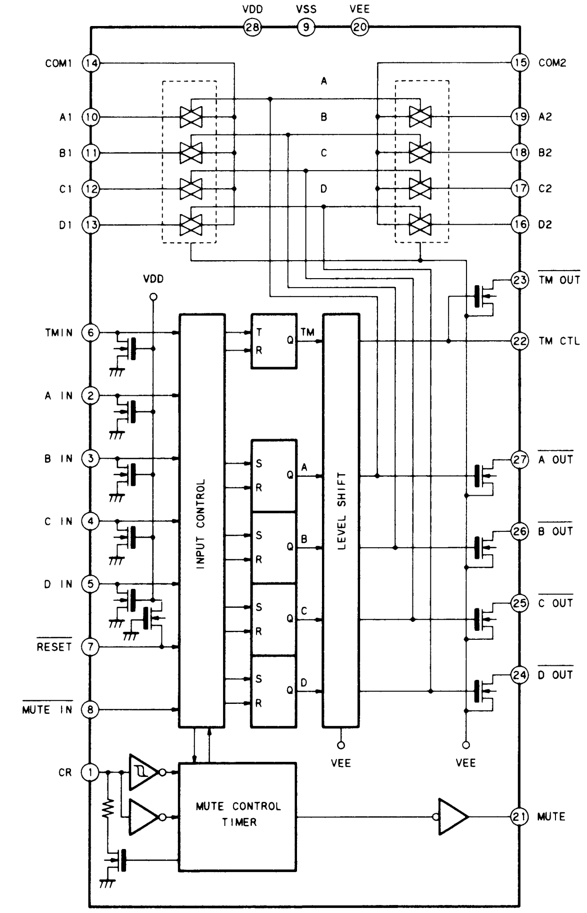
IC302 BA328


VCC
OUTPUT1
INPUT1
NFB1
GND
NFB2
INPUT2
OUTPUT2

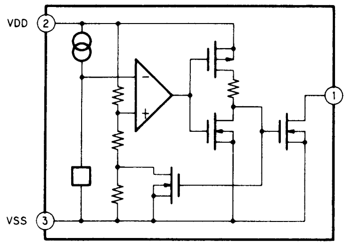
IC303 CXA1102M


REC IN
PB IN
REC/PB
LINE OUT
REC OUT
ATT1
ATT2
ATT3
SC
DET
REC IN
VCC
PB IN
ON/OFF
LINE OUT
REC OUT

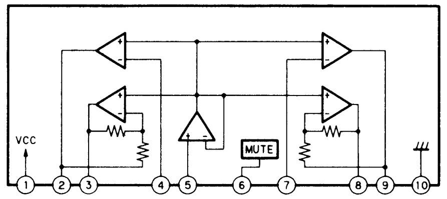
IC304 LC7815H


VDD
VSS
VEE
COM1
A1
B1
C1
D1
COM2
A2
B2
C2
D2
TM OUT
TM CTL
A OUT
B OUT
C OUT
D OUT
MUTE
TMIN
A IN
B IN
C IN
D IN
RESET
MUTE IN
CR
INPUT CONTROL
LEVEL SHIFT
MUTE CONTROL TIMER
VEE

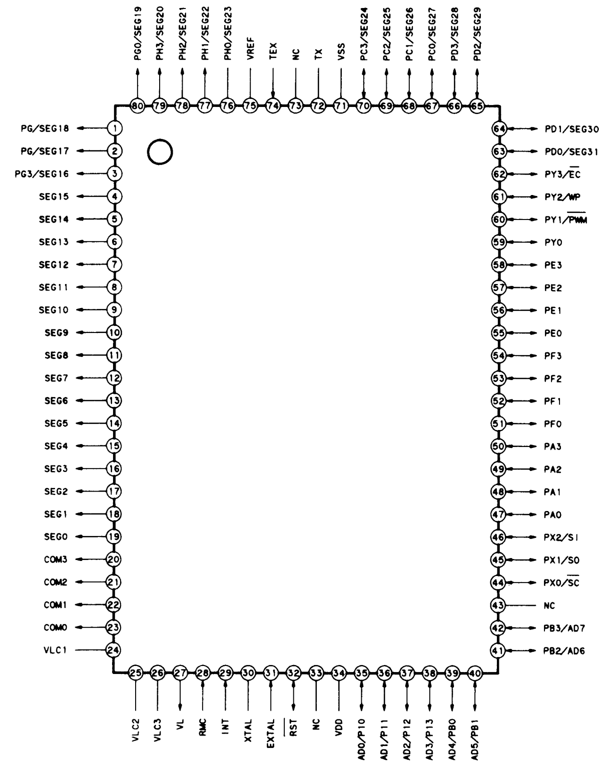
IC651 S-80740AN-D4-S



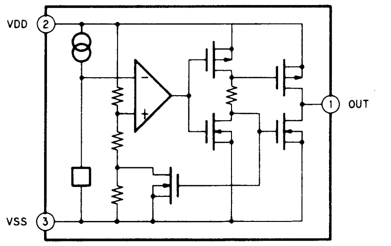
IC706, 707 BA6294-UV3



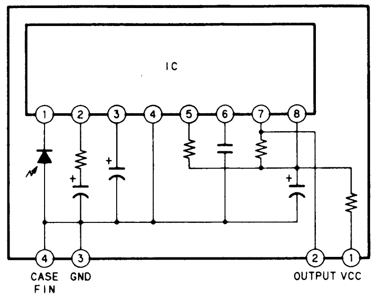
IC801 CXP5078-063Q


PG0/SEG19
PH3/SEG20
PH2/SEG21
PH1/SEG22
PH0/SEG23
VREF
TEX
NC
TX
VSS
PC3/SEG24
PC2/SEG25
PC1/SEG26
PC0/SEG27
PD3/SEG28
PD2/SEG29
PG/SEG18
PG/SEG17
PG3/SEG16
SEG15
SEG14
SEG13
SEG12
SEG11
SEG10
SEG9
SEG8
SEG7
SEG6
SEG5
SEG4
SEG3
SEG2
SEG1
SEG0
COM3
COM2
COM1
COM0
VLC1
PD1/SEG30
PD0/SEG31
PY3/EC
PY2/MP
PY1/PWM
PY0
PE3
PE2
PE1
PE0
PF3
PF2
PF1
PF0
PA3
PA2
PA1
PA0
PX2/SI
PX1/SO
PX0/SC
NC
PB3/AD7
PB2/AD6
VLC2
VLC3
VL
RMC
INT
XTAL
EXTAL
RST
NC
VDD
AD0/PI0
AD1/PI1
AD2/PI2
AD3/PI3
AD4/PB0
AD5/PB1

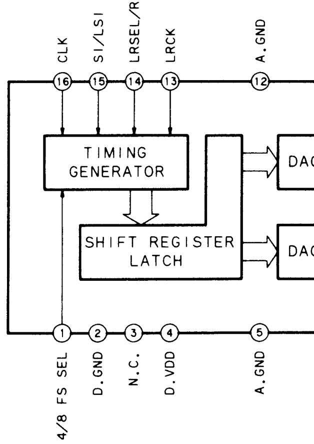
IC403 S-80741AL-A5-S
IC407 S-80730AN

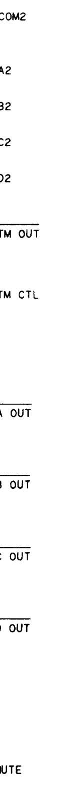


IC405 SBX1610-09

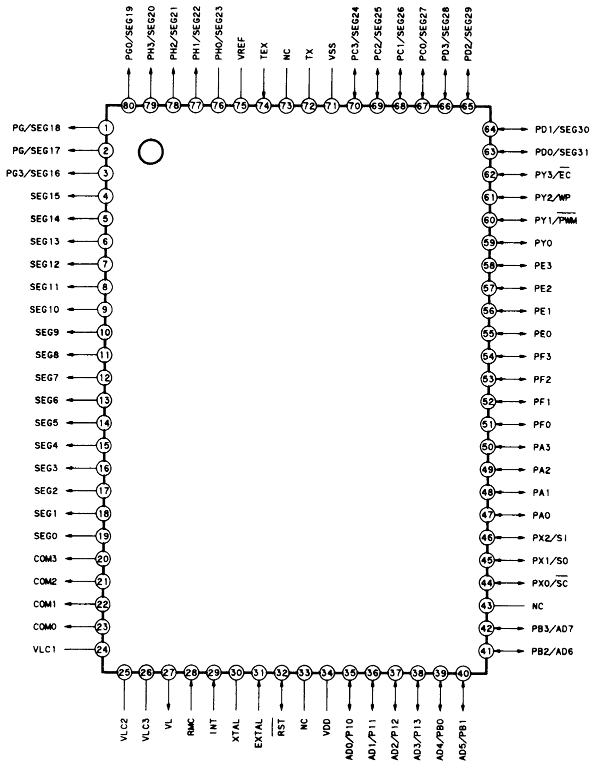

IC
CASE FIN
GND
OUTPUT VCC

IC704 μPD6376GS

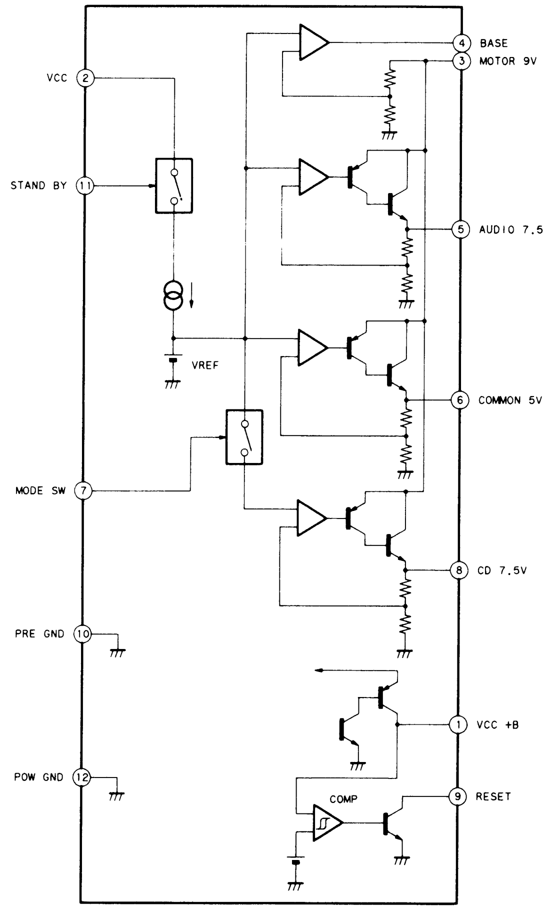

CLK
SI/LSI
LRSEL/RSI
LRCK
A.GND
TIMING GENERATOR
SHIFT REGISTER LATCH
4/8 FS SEL
D.GND
N.C.
D.VDD
A.GND


COM2
A2
B2
C2
D2
TM OUT
TM CTL
A OUT
B OUT
C OUT
D OUT
UTE

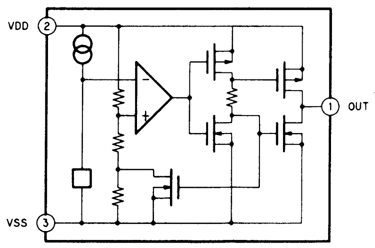
IC801 CXP5078-063Q


PG/SEG18 1
PG/SEG17 2
PG3/SEG16 3
SEG15 4
SEG14 5
SEG13 6
SEG12 7
SEG11 8
SEG10 9
SEG9 10
SEG8 11
SEG7 12
SEG6 13
SEG5 14
SEG4 15
SEG3 16
SEG2 17
SEG1 18
SEG0 19
COM3 20
COM2 21
COM1 22
COM0 23
VLC1 24
VLC2 25
VLC3 26
VL 27
RMC 28
INT 29
XTAL 30
EXTAL 31
RST 32
NC 33
VDD 34
AD0/P10 35
AD1/P11 36
AD2/P12 37
AD3/P13 38
AD4/PB0 39
AD5/PB1 40
PB2/AD6 41
PB3/AD7 42
NC 43
PX0/SC 44
PX1/SO 45
PX2/SI 46
PA0 47
PA1 48
PA2 49
PA3 50
PF0 51
PF1 52
PF2 53
PF3 54
PE0 55
PE1 56
PE2 57
PE3 58
PY0 59
PY1/PWM 60
PY2/WP 61
PY3/EC 62
PD0/SEG31 63
PD1/SEG30 64
PD2/SEG29 65
PD3/SEG28 66
PC0/SEG27 67
PC1/SEG26 68
PC2/SEG25 69
PC3/SEG24 70
VSS 71
TX 72
NC 73
TEX 74
VREF 75
PH0/SEG23 76
PH1/SEG22 77
PH2/SEG21 78
PH3/SEG20 79
PG0/SEG19 80

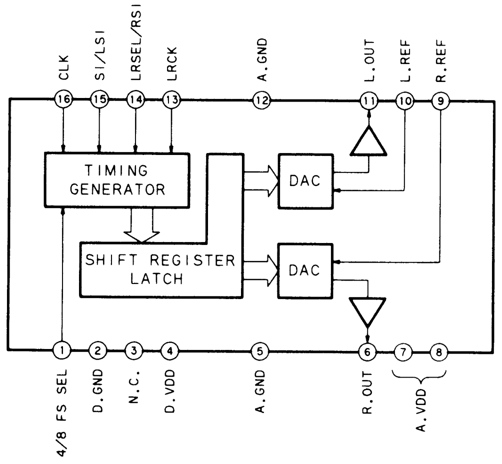
IC901 BA3924-V3


VCC 2
STAND BY 11
VREF
MODE SW 7
PRE GND 10
POW GND 12
4 BASE
3 MOTOR 9V
5 AUDIO 7.5V
6 COMMON 5V
8 CD 7.5V
1 VCC +B
COMP
9 RESET

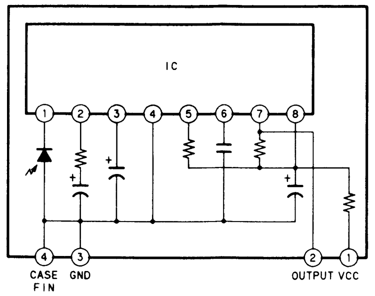
IC403 S-80741AL-A5-S
IC407 S-80730AN


VDD 2
VSS 3
1 OUT

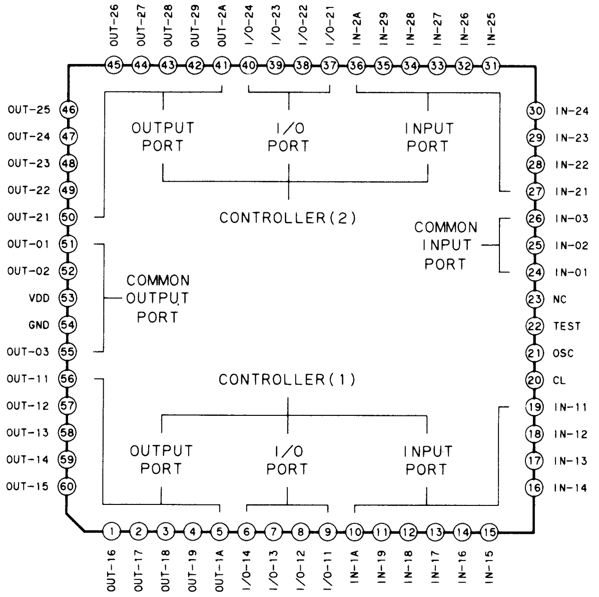
IC704 μPD6376GS


CLK 16
SI/LSI 15
LRSEL/RSI 14
LRCK 13
A.GND 12
L.OUT 11
L.REF 10
R.REF 9
TIMING GENERATOR
SHIFT REGISTER LATCH
DAC
DAC
1 4/8 FS SEL
2 D.GND
3 N.C.
4 D.VDD
5 A.GND
6 R.OUT
7 8 A.VDD

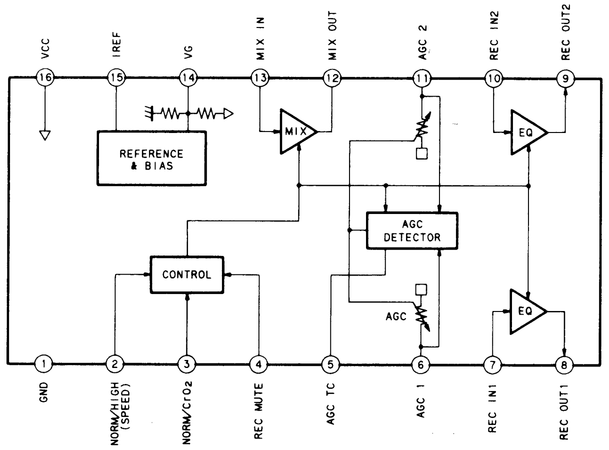
IC405 SBX1610-09


IC
1 2 3 4 5 6 7 8
4 CASE FIN
3 GND
2 OUTPUT
1 VCC

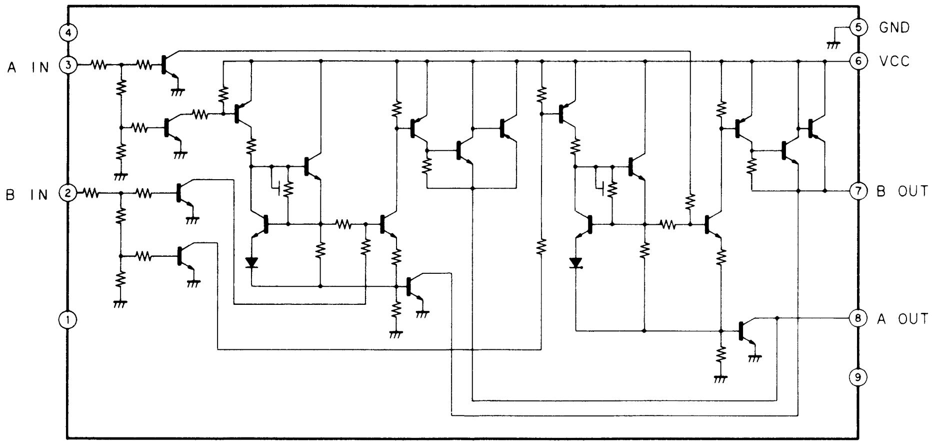
IC601 TC9315F


OUT-26 45
OUT-27 44
OUT-28 43
OUT-29 42
OUT-2A 41
I/O-24 40
I/O-23 39
I/O-22 38
I/O-21 37
IN-2A 36
IN-29 35
IN-28 34
IN-27 33
IN-26 32
IN-25 31
OUT-25 46
OUT-24 47
OUT-23 48
OUT-22 49
OUT-21 50
OUT-01 51
OUT-02 52
VDD 53
GND 54
OUT-03 55
OUT-11 56
OUT-12 57
OUT-13 58
OUT-14 59
OUT-15 60
30 IN-24
29 IN-23
28 IN-22
27 IN-21
26 IN-03
25 IN-02
24 IN-01
23 NC
22 TEST
21 OSC
20 CL
19 IN-11
18 IN-12
17 IN-13
16 IN-14
OUTPUT PORT
I/O PORT
INPUT PORT
CONTROLLER(2)
COMMON INPUT PORT
COMMON OUTPUT PORT
CONTROLLER(1)
OUTPUT PORT
I/O PORT
INPUT PORT
1 OUT-16
2 OUT-17
3 OUT-18
4 OUT-19
5 OUT-1A
6 I/O-14
7 I/O-13
8 I/O-12
9 I/O-11
10 IN-1A
11 IN-19
12 IN-18
13 IN-17
14 IN-16
15 IN-15

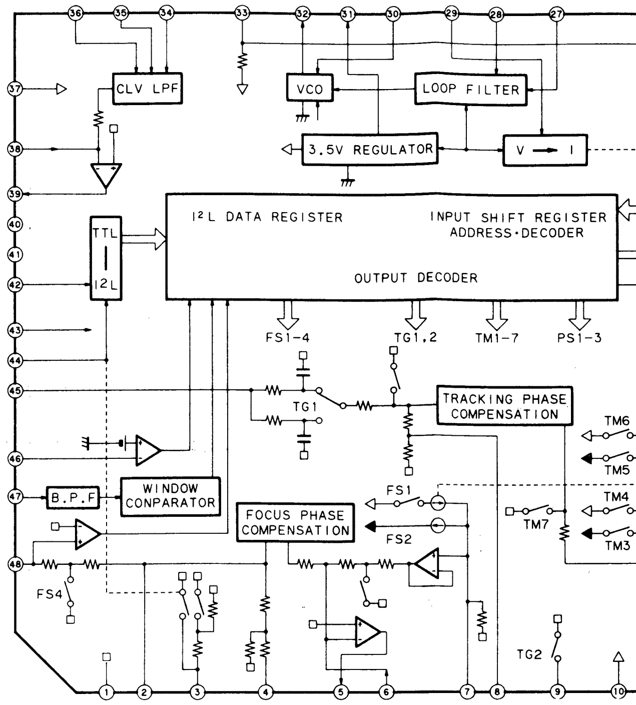
IC305 CXA1298AP


VCC 16
IREF 15
VG 14
MIX IN 13
MIX OUT 12
AGC 2 11
REC IN2 10
REC OUT2 9
REFERENCE & BIAS
MIX
EQ
AGC DETECTOR
CONTROL
AGC
EQ
1 GND
2 NORM/HIGH (SPEED)
3 NORM/CrO2
4 REC MUTE
5 AGC TC
6 AGC 1
7 REC IN1
8 REC OUT1

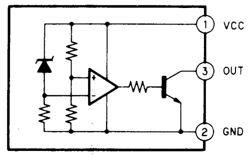
IC451 BA6208


4
A IN 3
B IN 2
1
5 GND
6 VCC
7 B OUT
8 A OUT
9

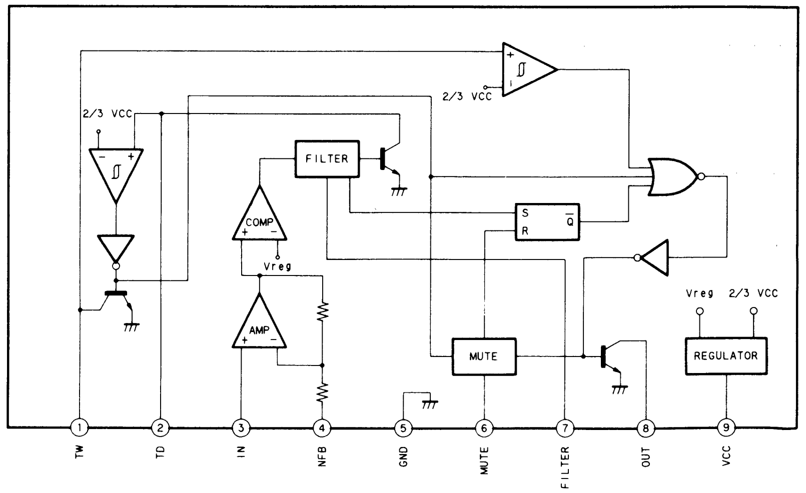
IC701 CXA1182Q-Z


36 35 34 33 32 31 30 29 28 27
37
38
39
40
41
42
43
44
45
46
47
48
CLV LPF
VCO
LOOP FILTER
3.5V REGULATOR
V → I
TTL
I2L
I²L DATA REGISTER
INPUT SHIFT REGISTER ADDRESS·DECODER
OUTPUT DECODER
FS1-4
TG1,2
TM1-7
PS1-3
TG1
TRACKING PHASE COMPENSATION
TM6
TM5
TM4
TM3
TM7
B.P.F
WINDOW CONPARATOR
FOCUS PHASE COMPENSATION
FS1
FS2
FS4
TG2
1 2 3 4 5 6 7 8 9 10

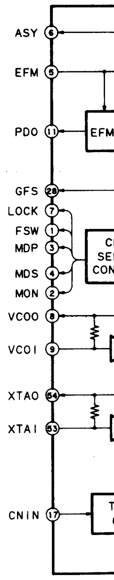
IC802 PST529J

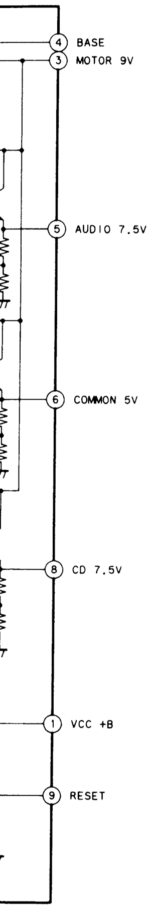

1 VCC
3 OUT
2 GND

IC602 BA3707


2/3 VCC
2/3 VCC
FILTER
COMP
Vreg
AMP
S
R
Q
MUTE
Vreg 2/3 VCC
REGULATOR
1 TW
2 TD
3 IN
4 NFB
5 GND
6 MUTE
7 FILTER
8 OUT
9 VCC

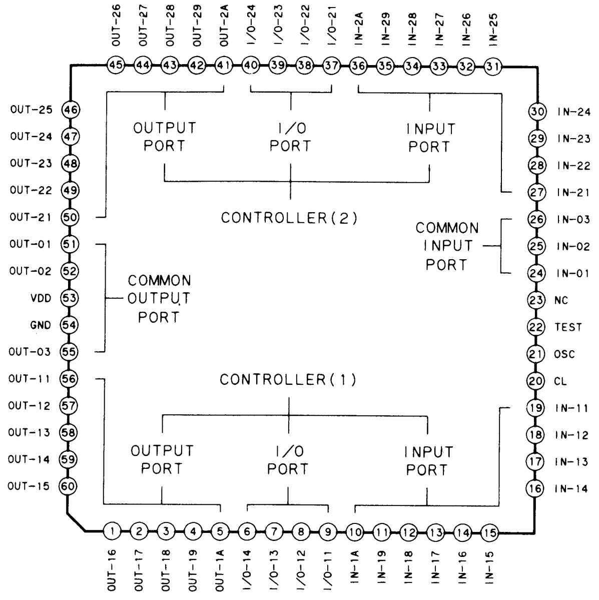
IC702


ASY 6
EFM 5
PDO 11
EFM
GFS 28
LOCK 7
FSW 1
MDP 3
MDS 4
MON 2
VCOO 8
VCOI 9
XTAO 54
XTAI 53
CNIN 17



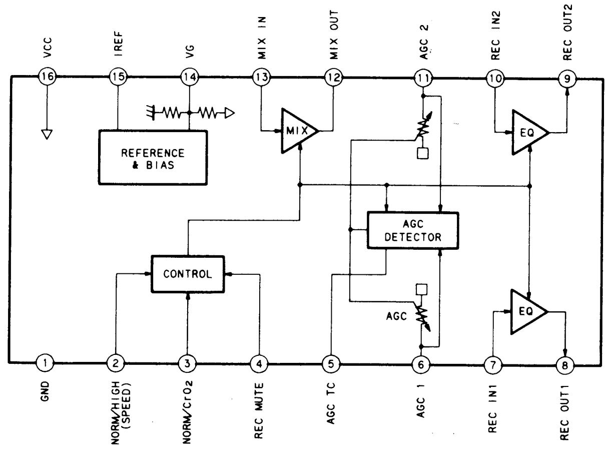
4 BASE
3 MOTOR 9V
5 AUDIO 7.5V
6 COMMON 5V
8 CD 7.5V
1 VCC +B
9 RESET

IC601 TC9315F



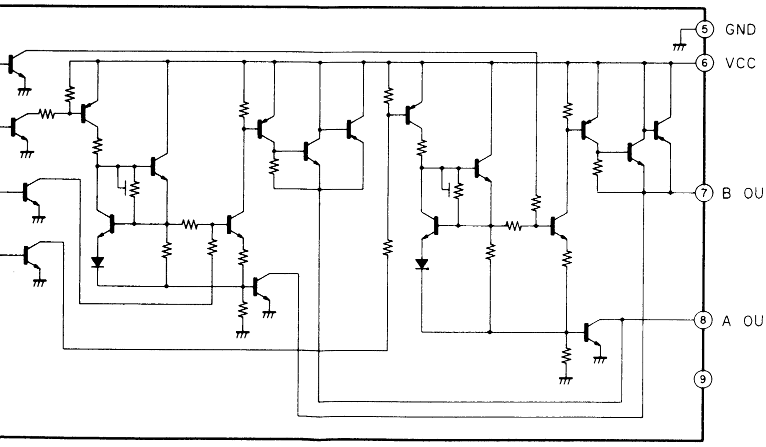
OUTPUT PORT
I/O PORT
INPUT PORT
CONTROLLER(2)
COMMON INPUT PORT
COMMON OUTPUT PORT
CONTROLLER(1)
OUT-25
OUT-24
OUT-23
OUT-22
OUT-21
OUT-01
OUT-02
VDD
GND
OUT-03
OUT-11
OUT-12
OUT-13
OUT-14
OUT-15
IN-24
IN-23
IN-22
IN-21
IN-03
IN-02
IN-01
NC
TEST
OSC
CL
IN-11
IN-12
IN-13
IN-14

IC305 CXA1298AP



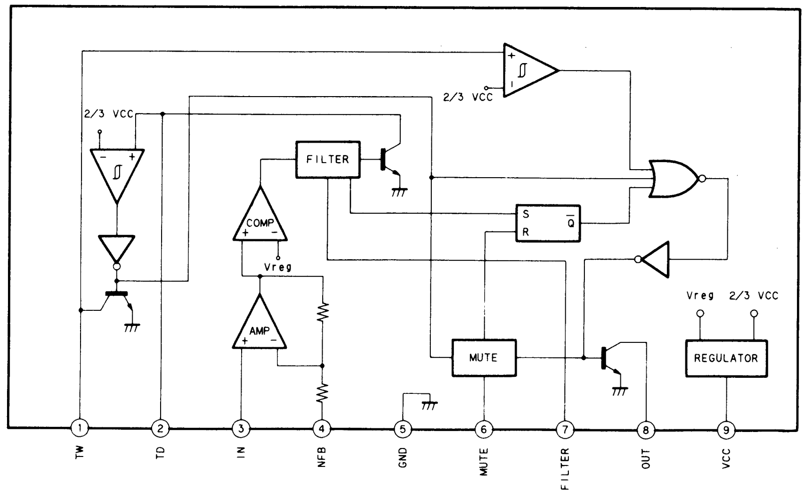
VCC
IREF
VG
MIX IN
MIX OUT
AGC 2
REC IN2
REC OUT2
REFERENCE & BIAS
MIX
EQ
AGC DETECTOR
CONTROL
AGC
EQ
GND
NORM/HIGH (SPEED)
NORM/CrO2
REC MUTE
AGC TC
AGC 1
REC IN1
REC OUT1

BA6208



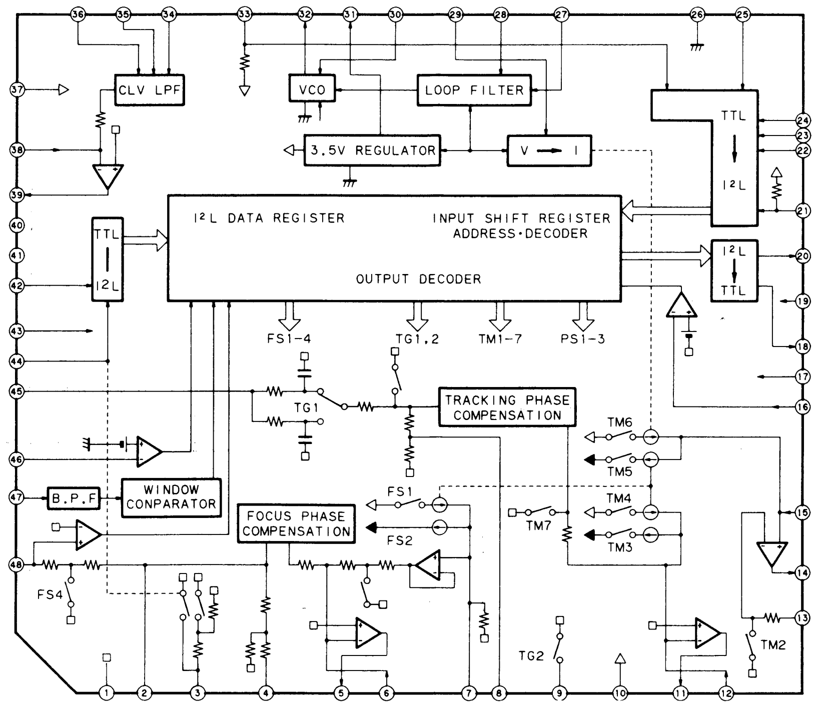
5 GND
6 VCC
7 B OUT
8 A OUT
9

IC602 BA3707



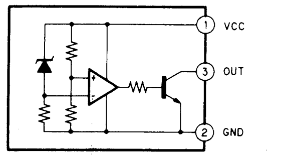
2/3 VCC
2/3 VCC
FILTER
COMP
Vreg
AMP
S
R
Q
MUTE
Vreg 2/3 VCC
REGULATOR
TW
TD
IN
NFB
GND
MUTE
FILTER
OUT
VCC

IC701 CXA1182Q-Z



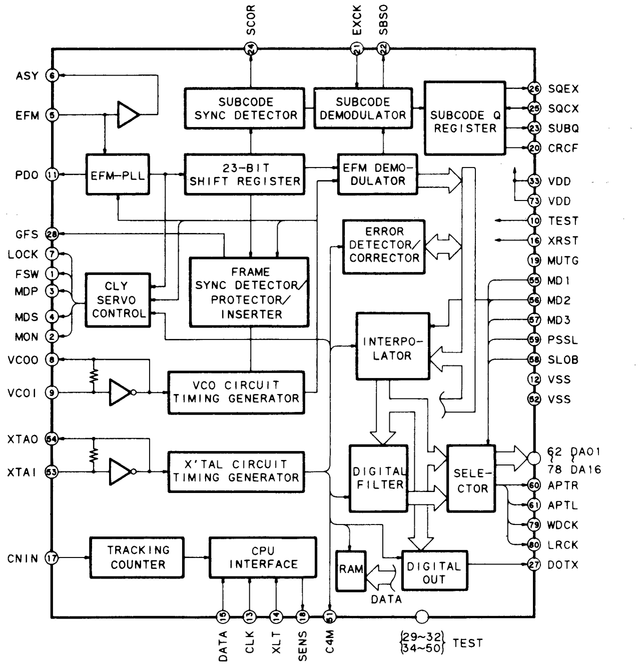
CLV LPF
VCO
LOOP FILTER
3.5V REGULATOR
V → I
TTL
I²L
I²L DATA REGISTER
INPUT SHIFT REGISTER ADDRESS·DECODER
OUTPUT DECODER
FS1-4
TG1,2
TM1-7
PS1-3
TG1
TRACKING PHASE COMPENSATION
TM6
TM5
FS1
TM4
FS2
TM7
TM3
WINDOW CONPARATOR
B.P.F
FOCUS PHASE COMPENSATION
FS4
TG2
TM2

IC802 PST529J



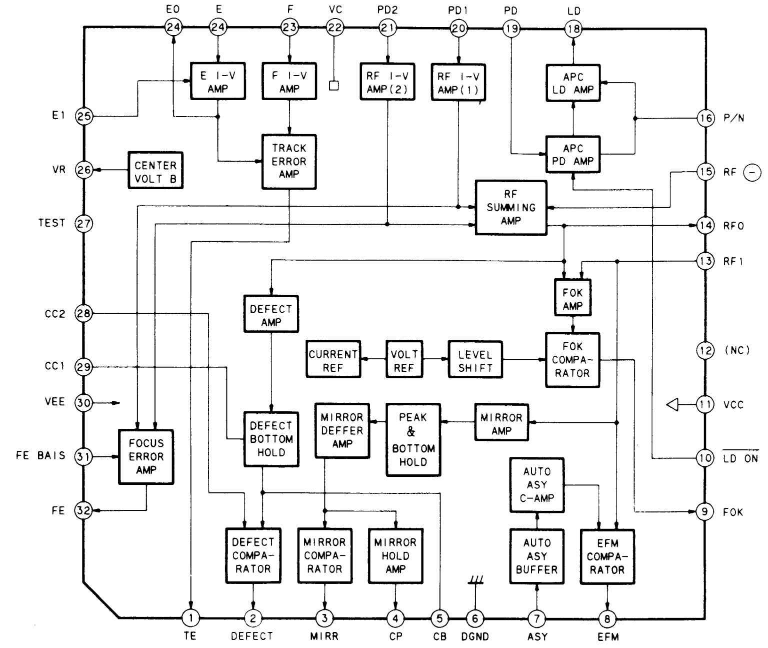
1 VCC
3 OUT
2 GND

IC702 CXD1167Q



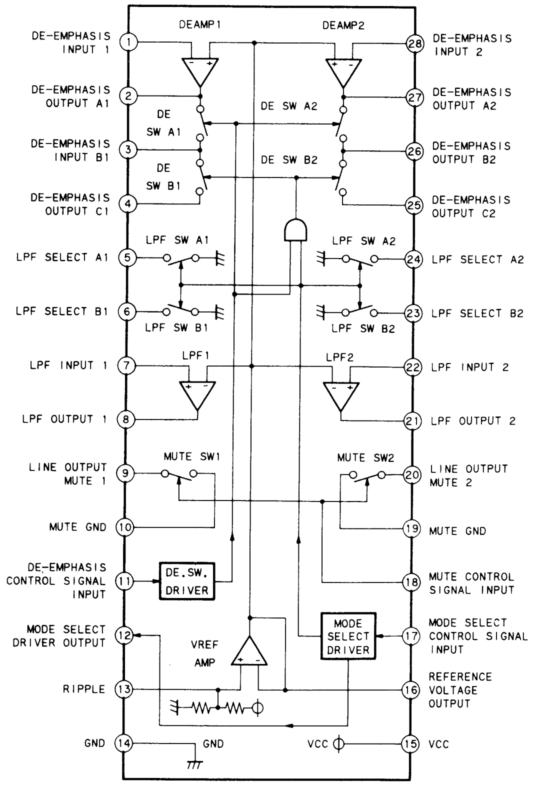
SCOR
EXCK
SBSO
ASY
EFM
PDO
GFS
LOCK
FSW
MDP
MDS
MON
VCOO
VCOI
XTAO
XTAI
CNIN
SUBCODE SYNC DETECTOR
SUBCODE DEMODULATOR
SUBCODE Q REGISTER
EFM-PLL
23-BIT SHIFT REGISTER
EFM DEMO-DULATOR
ERROR DETECTOR/CORRECTOR
CLV SERVO CONTROL
FRAME SYNC DETECTOR/PROTECTOR/INSERTER
INTERPO-LATOR
VCO CIRCUIT TIMING GENERATOR
X'TAL CIRCUIT TIMING GENERATOR
DIGITAL FILTER
SELE-CTOR
TRACKING COUNTER
CPU INTERFACE
RAM
DIGITAL OUT
DATA
SQEX
SQCX
SUBQ
CRCF
VDD
VDD
TEST
XRST
MUTG
MD1
MD2
MD3
PSSL
SLOB
VSS
VSS
DA01
DA16
APTR
APTL
WDCK
LRCK
DOTX
DATA
CLK
XLT
SENS
C4M
(29~32)(34~50) TEST

IC791 CXA1081Q



EO
E
F
VC
PD2
PD1
PD
LD
E I-V AMP
F I-V AMP
RF I-V AMP(2)
RF I-V AMP(1)
APC LD AMP
APC PD AMP
TRACK ERROR AMP
CENTER VOLT B
RF SUMMING AMP
FOK AMP
FOK COMPA-RATOR
DEFECT AMP
CURRENT REF
VOLT REF
LEVEL SHIFT
DEFECT BOTTOM HOLD
MIRROR DEFFER AMP
PEAK & BOTTOM HOLD
MIRROR AMP
FOCUS ERROR AMP
AUTO ASY C-AMP
AUTO ASY BUFFER
EFM COMPA-RATOR
DEFECT COMPA-RATOR
MIRROR COMPA-RATOR
MIRROR HOLD AMP
E1
VR
TEST
CC2
CC1
VEE
FE BAIS
FE
P/N
RF ⊖
RFO
RF1
(NC)
VCC
LD ON
FOK
TE
DEFECT
MIRR
CP
CB
DGND
ASY
EFM

IC705 M51591FP



DEAMP1
DEAMP2
DE-EMPHASIS INPUT 1
DE-EMPHASIS OUTPUT A1
DE-EMPHASIS INPUT B1
DE-EMPHASIS OUTPUT C1
LPF SELECT A1
LPF SELECT B1
LPF INPUT 1
LPF OUTPUT 1
LINE OUTPUT MUTE 1
MUTE GND
DE-EMPHASIS CONTROL SIGNAL INPUT
MODE SELECT DRIVER OUTPUT
RIPPLE
GND
DE SW A1
DE SW B1
DE SW A2
DE SW B2
LPF SW A1
LPF SW B1
LPF SW A2
LPF SW B2
LPF1
LPF2
MUTE SW1
MUTE SW2
DE.SW. DRIVER
VREF AMP
MODE SELECT DRIVER
DE-EMPHASIS INPUT 2
DE-EMPHASIS OUTPUT A2
DE-EMPHASIS OUTPUT B2
DE-EMPHASIS OUTPUT C2
LPF SELECT A2
LPF SELECT B2
LPF INPUT 2
LPF OUTPUT 2
LINE OUTPUT MUTE 2
MUTE GND
MUTE CONTROL SIGNAL INPUT
MODE SELECT CONTROL SIGNAL INPUT
REFERENCE VOLTAGE OUTPUT
VCC

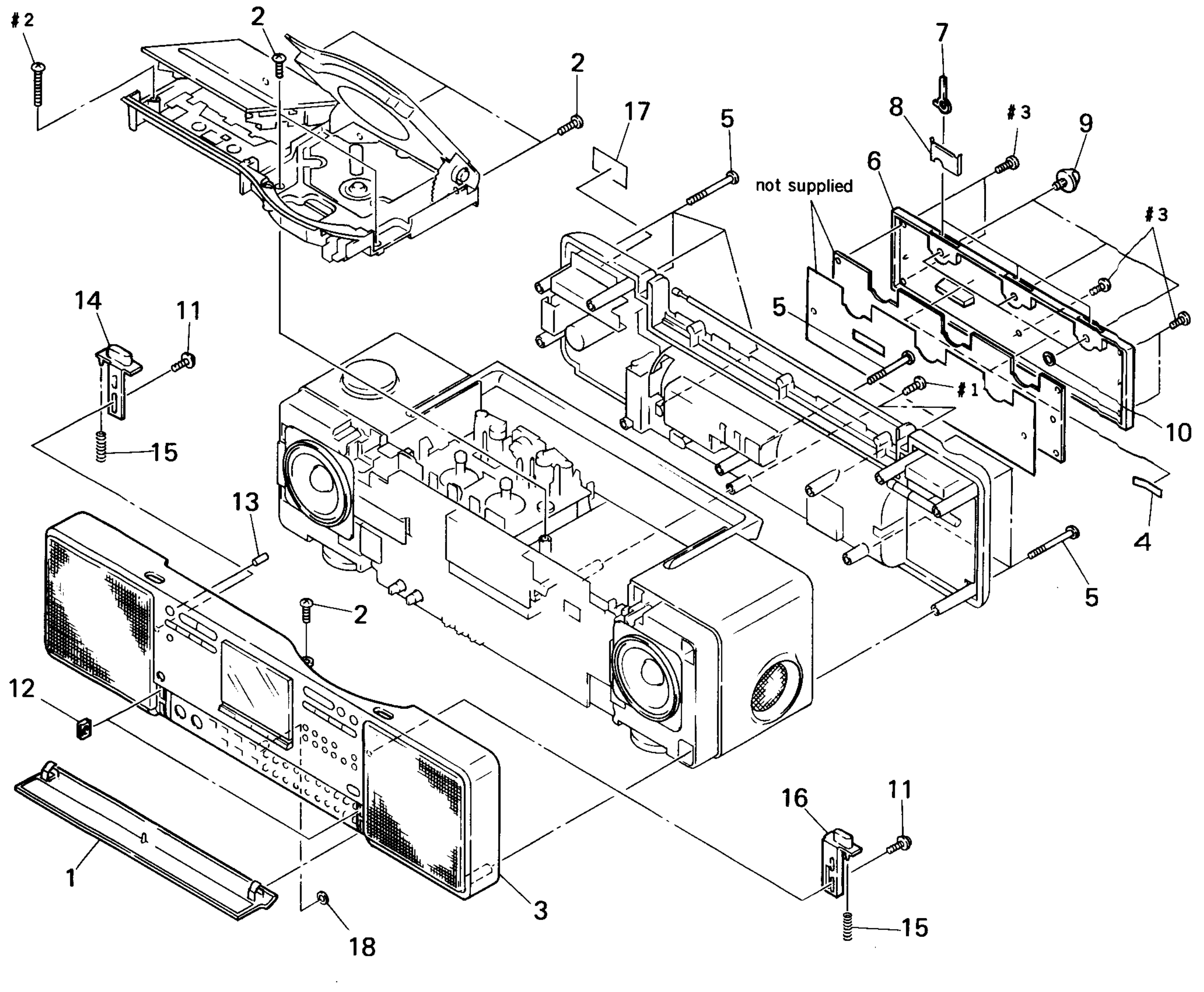
SECTION 8
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- G : Germany model
  IT: Italian model
- Hardware(# mark) list is given in the last of this parts list.

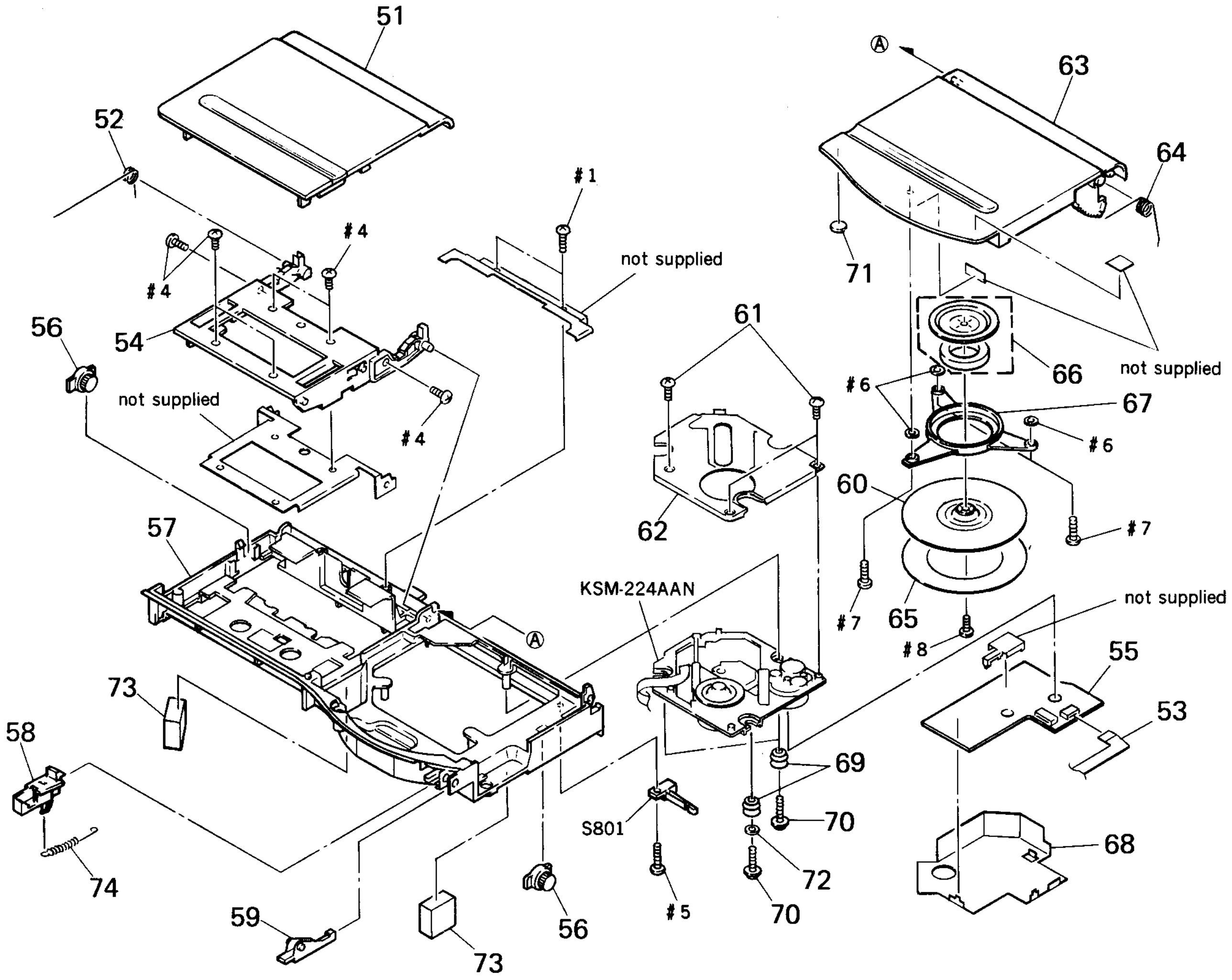
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

8-1. CABINET SECTION



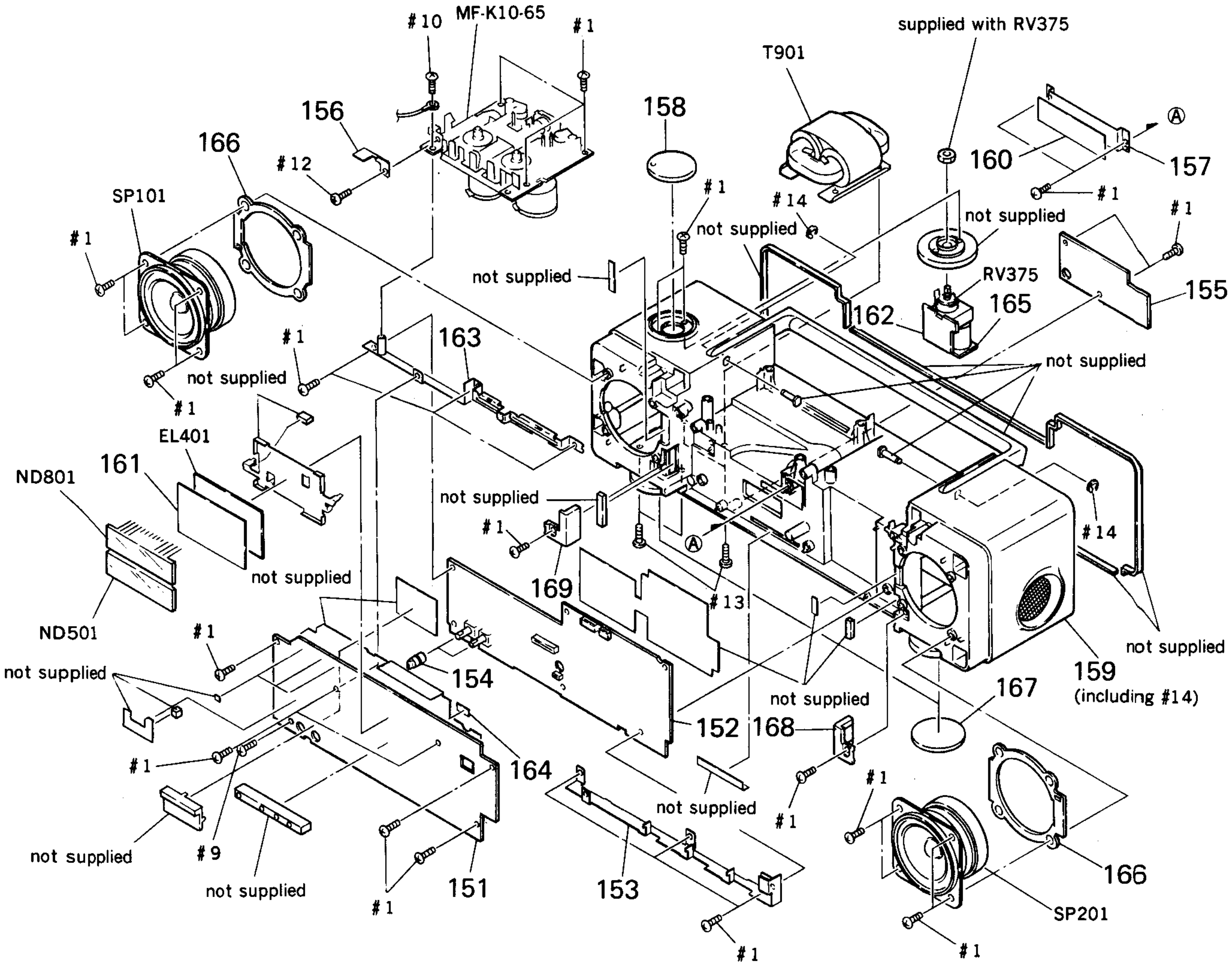
Ref. No.	Part No.	Description	Remark
1	X-3362-693-1	LID ASSY, CONTROL	
2	3-325-679-71	SCREW, TAPPING +BV 3X12	
3	X-3362-694-1	CABINET (FRONT) ASSY	
4	3-831-441-XX	SPACER	
5	4-918-246-01	SCREW (3X70), + BVTP	
6	4-938-347-01	LID, BATTERY CASE	
7	4-938-333-01	PLATE, LOCK	
8	4-938-334-01	RETAINER, LOCK	
9	4-938-319-01	KNOB (OPEN)	
10	3-363-191-01	WASHER (BA)	
11	3-318-201-11	SCREW (B) (1.4X3), TAPPING	
12	1-452-419-21	MAGNET	
13	3-364-192-01	GUIDE, BUTTON	
14	3-363-180-01	BUTTON (EJECT MD)	
15	3-363-698-01	SPRING, COMPRESSION	
16	3-363-179-01	BUTTON (EJECT CD)	
17	* 4-941-548-01	LABEL, CLASS 1	
18	4-932-613-01	WASHER 3	

8-2. CABINET (UPPER) ASSEMBLY SECTION


51
52
#1
#4
#4
#4
#4
not supplied
56
54
not supplied
57
Ⓐ
73
58
74
59
56
73
Ⓐ
63
64
71
61
#6
66
not supplied
67
#6
60
62
#7
KSM-224AAN
#7
65
not supplied
#8
55
53
69
S801
70
68
72
#5
70

Ref. No.	Part No.	Description	Remark
51	X-4938-304-1	LID ASSY, CASSETTE	
52	4-938-331-01	SPRING (MD), UP	
53	1-634-546-11	CD-RF-A FLEXIBLE BOARD	
54	4-938-351-01	HOLDER, CASSETTE	
55	* A-3261-455-A	CD MOTOR BOARD, COMPLETE	
56	3-319-224-31	DAMPER, SMALL	
57	4-938-356-01	CABINET (UPPER)	
58	4-938-336-01	CLAW, CD LOCK	
59	4-938-337-01	LEVER, CD EJECT	
60	4-919-973-01	PLATE (C), CHUCK	
61	3-318-203-62	SCREW (B1.7X4), TAPPING	
62	* 4-924-735-21	COVER, MD	
63	X-4938-303-1	LID ASSY, CD	
64	4-938-329-01	SPRING (CD), UP	
65	4-919-972-01	WASHER	
66	X-4918-291-1	MAGNET (B) ASSY	
67	4-938-335-01	COVER, CHUCKING	
68	* 3-363-415-02	PLATE (CD), SHIELD	
69	4-922-858-11	DAMPER	
70	3-363-347-01	SCREW	
71	3-364-158-01	SPACER (K)	
72	3-364-251-01	WASHER (CD)	
73	3-363-701-01	CUSHION (A), RUBBER	
74	3-570-171-00	SPRING, TENSION	
S801	1-571-283-11	SWITCH, LEAF (OPEN/CLOSE)	

8-4. CABINET (CENTER) ASSEMBLY SECTION

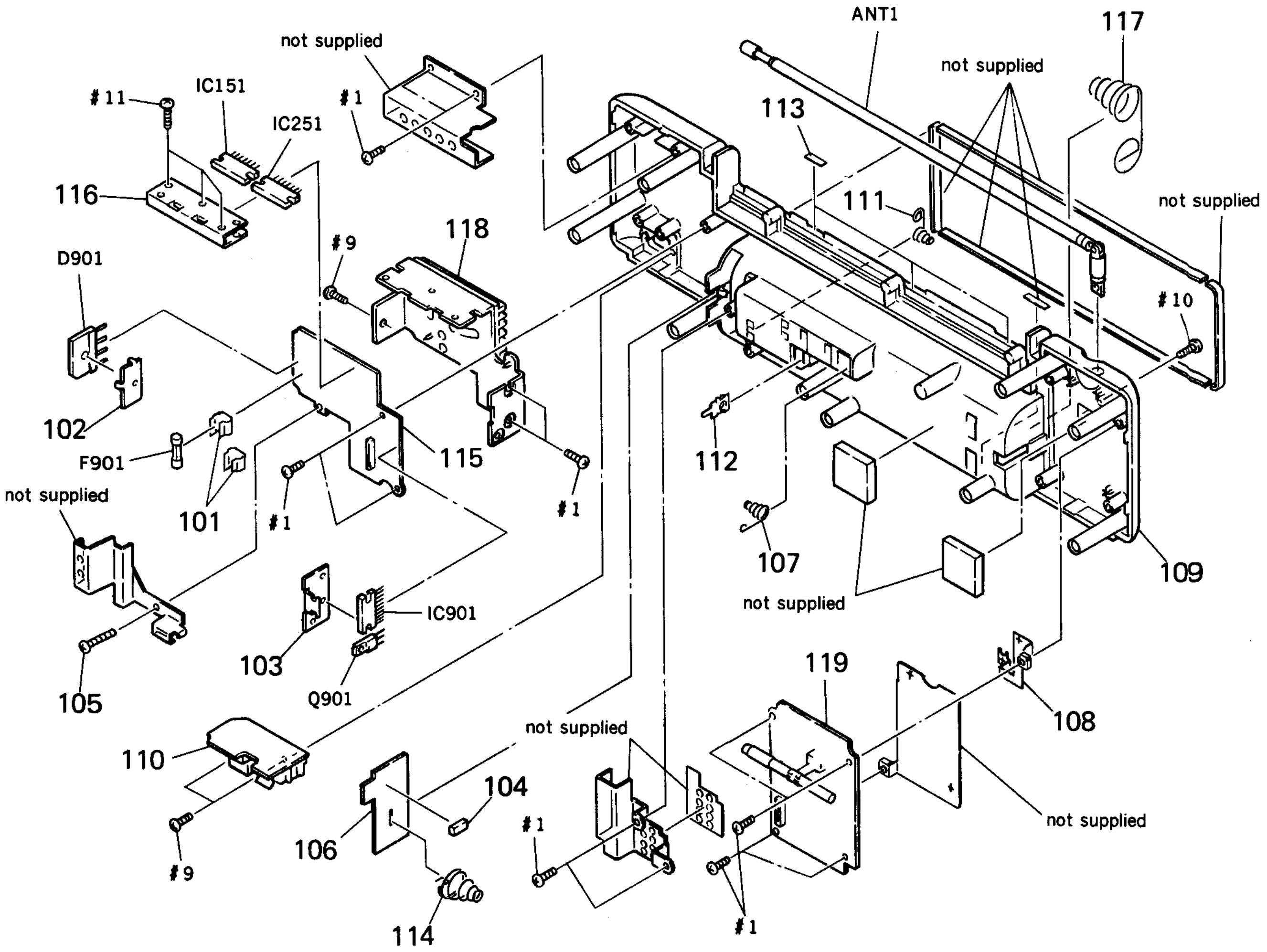

#10
MF-K10-65
#1
supplied with RV375
T901
156
166
#12
158
#1
#14
160
157
Ⓐ
#1
#1
not supplied
SP101
#1
not supplied
not supplied
RV375
162
165
155
163
#1
not supplied
not supplied
#1
EL401
ND801
161
not supplied
#1
#14
169
Ⓐ
#13
not supplied
ND501
#1
not supplied
154
not supplied
159
(including #14)
167
not supplied
152
168
164
#1
#1
not supplied
#1
not supplied
#9
not supplied
151
#1
153
166
SP201
#1
#1

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
151	* A-3261-459-A	CONTROL BOARD, COMPLETE	
152	* A-3261-458-A	AUDIO-CD BOARD, COMPLETE	
153	* 4-938-327-01	BRACKET (B)	
154	4-938-313-01	KNOB	
155	* A-3261-460-A	DRIVER BOARD, COMPLETE	
156	* 4-938-325-01	PLATE, EJECT	
157	* 3-363-186-01	PLATE, MOTOR SHIELD	
158	4-938-309-01	KNOB (VOL)	
159	X-3362-692-1	CABINET (CENTER) ASSY	
160	* 3-363-187-01	COVER, MOTOR SHIELD PLATE	
161	* 3-363-190-01	FILTER, E.L	
162	* 1-635-074-21	VOL BOARD	
163	* 4-938-326-01	BRACKET (A)	
164	3-363-837-01	SHEET, PROTECTION	
165	* 1-635-073-21	VOL MOTOR BOARD	

Ref. No.	Part No.	Description	Remark
166	3-363-174-01	CUSHION, SP	
167	3-363-188-01	FOOT (A), RUBBER	
168	3-362-264-01	RETAINER, LEAD	
169	3-362-265-01	RETAINER (B), LEAD	
EL401	1-519-612-11	ELEMENT, EL LUMINOUS	
ND501	1-809-284-11	DISPLAY PANEL, LIQUID CRYSTAL	
ND801	1-808-996-11	DISPLAY PANEL, LIQUID CRYSTAL	
RV375	1-238-177-11	RES, VAR, CARBON 50K/50K (VOLUME) (INCLUDING VOLUME MOTOR)	
SP101	1-544-390-11	SPEAKER	
SP201	1-544-390-11	SPEAKER	
T901	⚠· 1-450-389-11	TRANSFORMER, POWER (AEP, G, IT)	
T901	⚠· 1-450-432-11	TRANSFORMER, POWER (UK)	

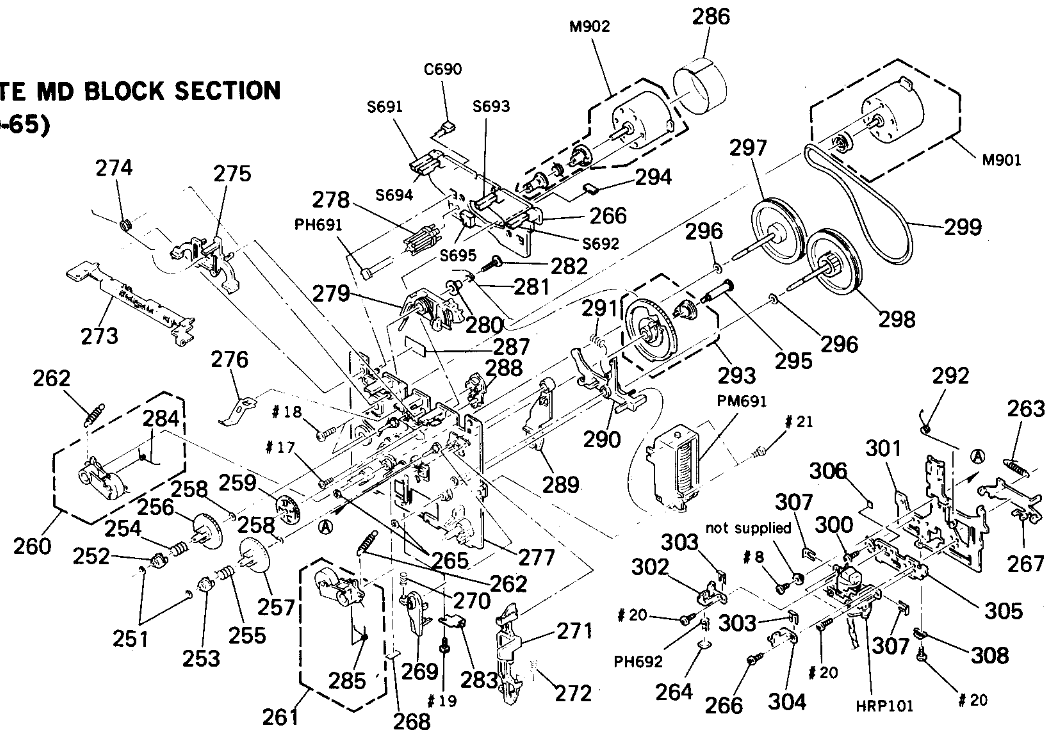
8-3. CABINET (REAR) ASSEMBLY SECTION


not supplied
ANT1
117
not supplied
#11
IC151
#1
IC251
113
116
111
not supplied
118
#9
D901
#10
102
115
112
F901
not supplied
101
#1
#1
107
not supplied
109
IC901
103
105
Q901
119
108
110
not supplied
104
#1
not supplied
106
#9
114
#1

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	1-533-217-31	HOLDER, FUSE	
102	* 4-938-340-01	BRACKET (B), HEAT SINK	
103	* 4-938-339-01	BRACKET (A), HEAT SINK	
104	4-932-611-01	TERMINAL (BTM)	
105	3-325-679-41	SCREW, TAPPING +BV 3X16	
106	* 1-635-077-21	BATTERY TERMINAL BOARD	
107	4-938-342-01	SPRING (BU), MINUS	
108	* 4-938-322-01	PLATE, CONTACT, ANT	
109	4-938-357-11	CABINET, REAR	
110	* 1-635-076-21	INLET BOARD	
111	4-938-323-01	SPRING (BU), + -	
112	4-922-829-01	TERMINAL BOARD	
113	3-831-441-XX	SPACER	
114	3-363-201-01	SPRING (-), BATTERY COIL	
115	* A-3261-452-A	POWER BOARD, COMPLETE	
116	* 3-363-880-01	BRACKET (D), HEAT SINK	
117	3-363-442-01	SPRING (C2), BATTERY COIL	
118	* X-3362-167-1	HEAT SINK ASSY	
119	* A-3261-451-A	TUNER BOARD, COMPLETE	
ANT1	1-501-378-11	ANTENNA, TELESCOPIC	
D901	8-719-302-38	DIODE RBV-602-01	
F901	⚠ 1-532-350-00	FUSE (4A)	
IC151	8-759-150-33	IC uPC2501H-1	
IC251	8-759-150-33	IC uPC2501H-1	
IC901	8-759-513-10	IC BA3924-V3	
Q901	8-729-924-90	TRANSISTOR 2SB1370-EF	

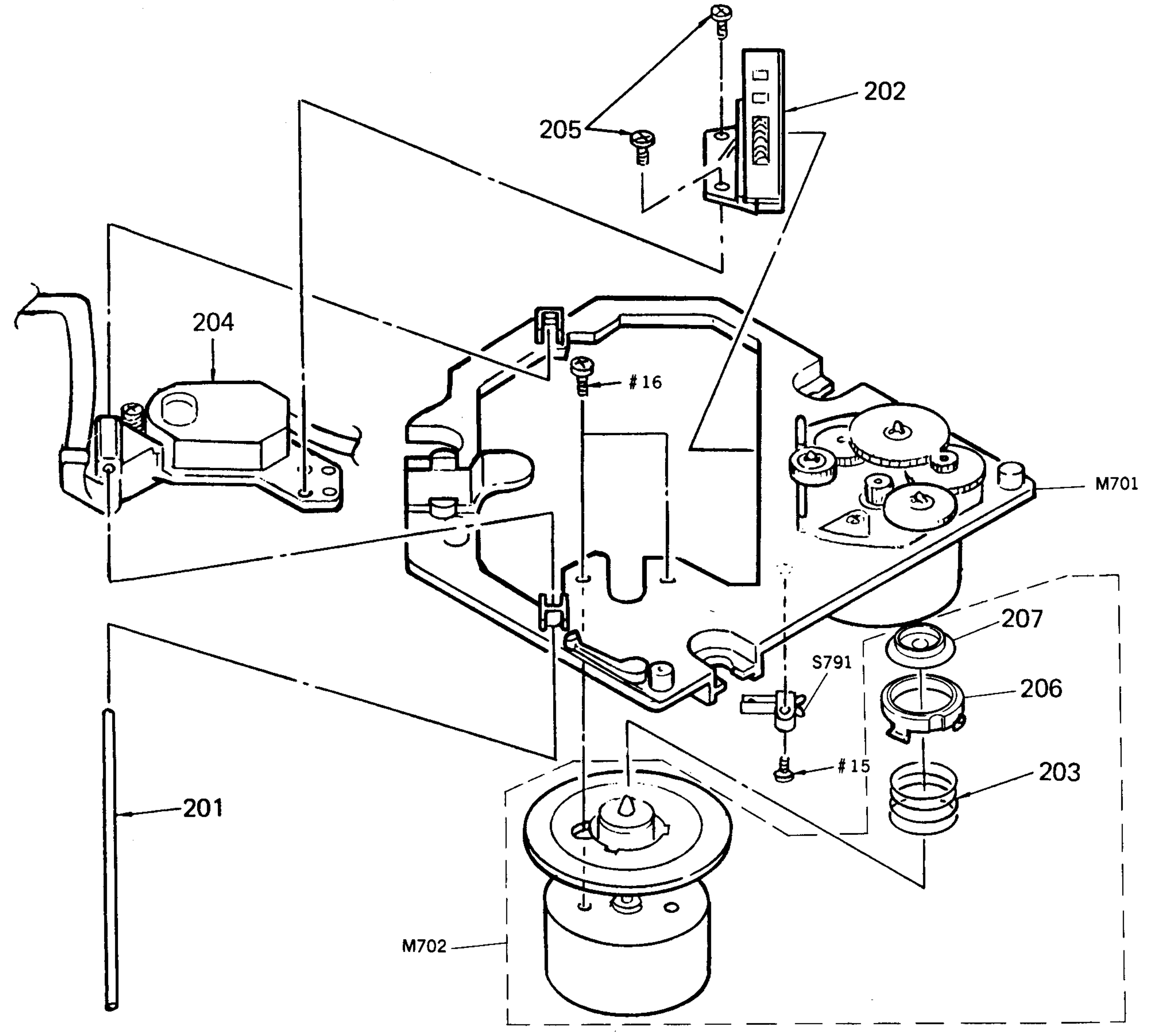
8-6. CASSETTE MD BLOCK SECTION (MF-K10-65)


M902
286
C690
S691
S693
274
275
278
S694
PH691
294
266
S692
297
M901
299
296
S695
282
281
279
280
287
288
291
273
276
262
284
#18
#17
258
259
256
254
258
260
252
Ⓐ
265
277
262
270
257
251
255
253
285
269
#19
283
271
272
261
268
298
295
296
293
PM691
#21
290
289
292
263
301
306
Ⓐ
307
not supplied
300
303
#8
302
267
305
#20
303
PH692
264
266
304
#20
307
308
HRP101
#20

Ref. No.	Part No.	Description	Remark
251	3-701-437-51	WASHER	
252	3-362-481-11	CLAW (S), REEL	
253	3-362-480-11	CLAW (T), REEL	
254	3-362-830-02	SPRING (RT), TORSION	
255	3-362-831-02	SPRING (RS), TORSION	
256	A-3130-037-A	GEAR (REEL) ASSY	
257	3-362-482-01	GEAR (REEL)	
258	3-578-223-21	WASHER, NYLON	
259	3-362-483-01	GEAR (DRIVING A)	
260	X-3306-509-1	LEVER (R) ASSY, PC	
261	X-3306-508-1	LEVER (N) ASSY, PC	
262	4-602-490-01	SPRING, TENSION	
263	3-363-432-01	SPRING, TENSION	
264	* 1-612-589-12	READER DETECTION BOARD	
265	3-343-358-12	RING, RETAINING	
266	1-635-797-11	MD SW (K10) BOARD	
267	* X-3362-073-2	SLIDER (NR2) ASSY	
268	* 3-360-334-03	PAPER (B), REFLECTION	
269	3-360-324-01	LEVER, AMS	
270	3-360-336-01	SPRING, COMPRESSION	
271	3-360-307-01	SLIDER (EJECT)	
272	3-363-790-01	SPRING, COMPRESSION	
273	3-360-312-01	PLATE, SW RETURN	
274	3-360-310-01	SPRING (BRAKE), TORSION	
275	3-360-348-01	BRAKE	
276	3-360-328-01	PLATE, CASSETTE	
277	X-3306-546-1	CHASSIS (M) ASSY	
278	3-360-345-01	HOLDER (PHOTO)	
279	X-3306-511-1	LINK (LIMITER) ASSY	
280	3-363-146-01	SLEEVE, SPRING RETAINER	
281	3-360-337-05	SPRING (CAM), TORSION	
282	3-344-728-01	SCREW (B1.4), TAPPING	
283	3-365-586-01	RETAINER, WIRE	
284	3-360-316-01	SPRING (R), TORSION	
285	3-360-315-01	SPRING (N), TORSION	
286	* 3-162-496-01	PLATE, SHIELD	

Ref. No.	Part No.	Description	Remark
287	3-831-441-XX	SPACER	
288	3-306-599-01	ARM, DRIVING	
289	3-360-306-01	LEVER, N	
290	3-360-304-01	LEVER, PL	
291	3-344-751-01	SPRING, COMPRESSION	
292	3-360-321-01	SPRING, TORSION	
293	X-3362-641-1	GEAR ASSY, CAM	
294	3-364-125-01	CUSHION (RM)	
295	3-364-608-01	SCREW (M2.6X11.6X3.5), STEP	
296	3-701-437-11	WASHER (t=0.25)	
297	X-3306-513-1	FLYWHEEL (R) ASSY	
298	X-3306-512-1	FLYWHEEL (N) ASSY	
299	3-360-327-01	BELT	
300	3-363-433-02	SCREW	
301	X-3362-100-2	BASE ASSY, HEAD	
302	3-319-287-01	GUIDE, TAPE	
303	4-932-603-01	SHIM (t=0.1)	
303	4-932-603-11	SHIM (t=0.2)	
304	4-930-438-01	GUIDE, TAPE	
305	3-362-786-11	PLATE, SPACE	
306	* 4-918-544-21	SHEET	
307	3-336-274-01	SHIM (t=0.1)	
307	3-336-274-11	SHIM (t=0.2)	
307	3-336-274-21	SHIM (t=0.3)	
308	* 3-363-812-11	CLAMP, LEAD	
C690	1-136-177-51	FILM 1uF 5% 50V	
HRP101	A-3113-038-A	HEAD ASSY, ROTARY (REC/PB/ERASE)	
M901	A-3133-405-A	MOTOR ASSY, CAPSTAN	
M902	A-3133-406-A	MOTOR ASSY, REEL	
PH691	8-719-939-11	PHOTO INTERRUPTER-2S09-B	
PH692	8-719-939-11	PHOTO INTERRUPTER-2S09-B	
PM691	1-454-533-11	SOLENOID, PLUNGER	
S691	1-572-248-11	SWITCH, LEAF (P.E.A)	
S692	1-572-248-11	SWITCH, LEAF (P.E.B)	
S693	1-572-248-11	SWITCH, LEAF (CASSETTE DET)	
S694	1-572-248-11	SWITCH, LEAF (120uS/70uS)	
S695	1-571-263-11	SWITCH (HEAD DET)	

8-5. CD MECHANISM BLOCK SECTION
(KSM-224AAN)



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
201	* 2-641-534-01	SHAFT	
202	X-2641-528-1	RACK ASSY	
203	2-641-524-01	SPRING (A), COMPRESSION	
204	⚠· 8-848-169-01	DEVICE, OPTICAL KSS-224A	
205	2-641-383-01	SCREW (M1.7X4) (NK), TOOTH	
206	2-641-539-08	RING, CENTER	
207	2-644-016-02	CAP, CENTER	
M701	X-2644-016-1	MOTOR ASSY G(RP)	
M702	X-2644-014-1	MOTOR ASSY, SPINDLE	
S791	1-570-112-11	SWITCH, LEAF (LIMIT IN)	

AUDIO-CD

Ref. No.	Part No.	Description			Remark
C221	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C222	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C223	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C224	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C225	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C226	1-126-157-11	ELECT	10uF	20%	16V
C227	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C228	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C229	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C230	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C231	1-126-044-11	ELECT	1uF	20%	50V
C232	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C234	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C235	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C236	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C237	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C238	1-136-165-00	FILM	0.1uF	5%	50V
C239	1-136-165-00	FILM	0.1uF	5%	50V
C241	1-126-044-11	ELECT	1uF	20%	50V
C242	1-126-301-11	ELECT	1uF	20%	50V
C301	1-124-994-11	ELECT	100uF	20%	10V
C302	1-126-022-11	ELECT	47uF	20%	16V
C303	1-124-994-11	ELECT	100uF	20%	10V
C304	1-124-995-11	ELECT	220uF	20%	10V
C305	1-126-923-11	ELECT	220uF	20%	10V
C306	1-124-994-11	ELECT	100uF	20%	10V
C307	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C308	1-124-994-11	ELECT	100uF	20%	10V
C309	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C310	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C311	1-126-022-11	ELECT	47uF	20%	16V
C312	1-130-482-00	MYLAR	0.0082uF	5%	50V
C313	1-124-994-11	ELECT	100uF	20%	10V
C314	1-124-994-11	ELECT	100uF	20%	10V
C316	1-124-927-11	ELECT	4.7uF	20%	100V
C317	1-124-994-11	ELECT	100uF	20%	10V
C318	1-123-875-11	ELECT	10uF	20%	50V
C319	1-123-875-11	ELECT	10uF	20%	50V
C320	1-124-994-11	ELECT	100uF	20%	10V
C321	1-126-163-11	ELECT	4.7uF	20%	50V
C322	1-124-791-11	ELECT	1.0uF	20%	100V
C323	1-124-791-11	ELECT	1.0uF	20%	100V
C324	1-124-995-11	ELECT	220uF	20%	10V
C701	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C702	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C703	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C704	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C705	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C706	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C707	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C708	1-124-034-51	ELECT	33uF	20%	16V
C709	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C710	1-124-034-51	ELECT	33uF	20%	16V
C711	1-124-902-00	ELECT	0.47uF	20%	50V
C712	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C713	1-136-173-00	FILM	0.47uF	5%	50V
C714	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C715	1-130-477-00	MYLAR	0.0033uF	5%	50V
C716	1-124-927-11	ELECT	4.7uF	20%	100V
C717	1-124-791-11	ELECT	1.0uF	20%	100V
C718	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C719	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C720	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C721	1-126-103-11	ELECT	470uF	20%	16V
C722	1-136-165-00	FILM	0.1uF	5%	50V
C723	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C724	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C725	1-130-493-00	MYLAR	0.068uF	5%	50V
C726	1-124-034-51	ELECT	33uF	20%	16V
C727	1-123-875-11	ELECT	10uF	20%	50V
C729	1-136-165-00	FILM	0.1uF	5%	50V
C730	1-131-375-00	TANTALUM	4.7uF	10%	10V
C731	1-124-034-51	ELECT	33uF	20%	16V
C732	1-136-165-00	FILM	0.1uF	5%	50V
C733	1-136-165-00	FILM	0.1uF	5%	50V
C734	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C735	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C736	1-124-791-11	ELECT	1.0uF	20%	100V
C737	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C738	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C739	1-124-995-11	ELECT	220uF	20%	10V
C740	1-126-021-11	ELECT	33uF	20%	16V
C741	1-126-021-11	ELECT	33uF	20%	16V
C743	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C744	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C745	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C746	1-124-791-11	ELECT	1.0uF	20%	100V
C747	1-124-999-11	ELECT	2200uF	20%	10V
C748	1-126-103-11	ELECT	470uF	20%	16V
C749	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C750	1-126-103-11	ELECT	470uF	20%	16V
C751	1-126-163-11	ELECT	4.7uF	20%	50V
C752	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C753	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C754	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- CAPACITORS
  uF: μF
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: μH
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD....
- G : Germany model
  IT: Italian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
	* A-3261-458-A	AUDIO-CD BOARD, COMPLETE			
		************************			
		< CAPACITOR >			
C101	1-126-163-11	ELECT	4.7uF	20%	50V
C102	1-124-994-11	ELECT	100uF	20%	10V
C103	1-130-487-00	MYLAR	0.022uF	5%	50V
C104	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C105	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C106	1-126-163-11	ELECT	4.7uF	20%	50V
C107	1-130-487-00	MYLAR	0.022uF	5%	50V
C108	1-126-163-11	ELECT	4.7uF	20%	50V
C109	1-126-163-11	ELECT	4.7uF	20%	50V
C110	1-126-163-11	ELECT	4.7uF	20%	50V
C111	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C112	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C113	1-126-157-11	ELECT	10uF	20%	16V
C114	1-136-175-00	FILM	0.68uF	5%	50V
C115	1-126-163-11	ELECT	4.7uF	20%	50V
C116	1-126-163-11	ELECT	4.7uF	20%	50V
C117	1-126-163-11	ELECT	4.7uF	20%	50V
C118	1-126-044-11	ELECT	1uF	20%	50V
C119	1-126-044-11	ELECT	1uF	20%	50V
C120	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C121	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C122	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C123	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C124	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-126-157-11	ELECT	10uF	20%	16V
C127	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C128	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C129	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C130	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C131	1-126-044-11	ELECT	1uF	20%	50V
C132	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C134	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C135	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C136	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C137	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C138	1-136-165-00	FILM	0.1uF	5%	50V
C139	1-136-165-00	FILM	0.1uF	5%	50V
C141	1-126-044-11	ELECT	1uF	20%	50V
C142	1-126-301-11	ELECT	1uF	20%	50V
C201	1-126-163-11	ELECT	4.7uF	20%	50V
C202	1-124-994-11	ELECT	100uF	20%	10V
C203	1-130-487-00	MYLAR	0.022uF	5%	50V
C204	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C205	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C206	1-126-163-11	ELECT	4.7uF	20%	50V
C207	1-130-487-00	MYLAR	0.022uF	5%	50V
C208	1-126-163-11	ELECT	4.7uF	20%	50V
C209	1-126-163-11	ELECT	4.7uF	20%	50V
C210	1-126-163-11	ELECT	4.7uF	20%	50V
C211	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C212	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C213	1-126-157-11	ELECT	10uF	20%	16V
C214	1-136-175-00	FILM	0.68uF	5%	50V
C215	1-126-163-11	ELECT	4.7uF	20%	50V
C216	1-126-163-11	ELECT	4.7uF	20%	50V
C217	1-126-163-11	ELECT	4.7uF	20%	50V
C218	1-126-044-11	ELECT	1uF	20%	50V
C219	1-126-044-11	ELECT	1uF	20%	50V
C220	1-164-005-11	CERAMIC CHIP	0.47uF		25V

AUDIO-CD

Ref. No.	Part No.	Description			Remark
Q304	8-729-920-31	TRANSISTOR DTC343TK			
Q305	8-729-140-75	TRANSISTOR 2SD999-CLCK			
Q701	8-729-100-66	TRANSISTOR 2SC1623			
Q703	8-729-901-05	TRANSISTOR DTA124EK			
Q704	8-729-100-66	TRANSISTOR 2SC1623			
Q705	8-729-900-98	TRANSISTOR DTC143TK			
Q706	8-729-900-98	TRANSISTOR DTC143TK			
Q707	8-729-100-66	TRANSISTOR 2SC1623			
Q708	8-729-100-66	TRANSISTOR 2SC1623			
Q709	8-729-901-00	TRANSISTOR DTC124EK			
Q710	8-729-901-00	TRANSISTOR DTC124EK			
Q711	8-729-901-00	TRANSISTOR DTC124EK			
Q712	8-729-140-75	TRANSISTOR 2SD999-CLCK			
		< RESISTOR >			
R101	1-216-023-00	METAL CHIP	82	5%	1/10W
R102	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R103	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R104	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R105	1-216-121-00	METAL CHIP	1M	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-047-00	METAL CHIP	820	5%	1/10W
R108	1-216-748-11	METAL CHIP	39K	5%	1/10W
R109	1-216-081-00	METAL CHIP	22K	5%	1/10W
R110	1-216-085-00	METAL CHIP	33K	5%	1/10W
R111	1-216-081-00	METAL CHIP	22K	5%	1/10W
R120	1-216-075-00	METAL CHIP	12K	5%	1/10W
R121	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R124	1-216-025-00	METAL CHIP	100	5%	1/10W
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W
R127	1-216-093-00	METAL CHIP	68K	5%	1/10W
R128	1-216-085-00	METAL CHIP	33K	5%	1/10W
R129	1-216-089-00	METAL CHIP	47K	5%	1/10W
R130	1-216-083-00	METAL CHIP	27K	5%	1/10W
R131	1-216-049-00	METAL CHIP	1K	5%	1/10W
R132	1-216-091-00	METAL CHIP	56K	5%	1/10W
R133	1-216-091-00	METAL CHIP	56K	5%	1/10W
R134	1-216-073-00	METAL CHIP	10K	5%	1/10W
R136	1-216-077-00	METAL CHIP	15K	5%	1/10W
R137	1-216-077-00	METAL CHIP	15K	5%	1/10W
R138	1-216-085-00	METAL CHIP	33K	5%	1/10W
R139	1-216-121-00	METAL CHIP	1M	5%	1/10W
R140	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R141	1-216-109-00	METAL CHIP	330K	5%	1/10W
R142	1-216-033-00	METAL CHIP	220	5%	1/10W
R143	1-216-081-00	METAL CHIP	22K	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R201	1-216-023-00	METAL CHIP	82	5%	1/10W
R202	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R203	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R204	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R205	1-216-121-00	METAL CHIP	1M	5%	1/10W
R206	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R207	1-216-047-00	METAL CHIP	820	5%	1/10W
R208	1-216-748-11	METAL CHIP	39K	5%	1/10W
R209	1-216-081-00	METAL CHIP	22K	5%	1/10W
R210	1-216-085-00	METAL CHIP	33K	5%	1/10W
R211	1-216-081-00	METAL CHIP	22K	5%	1/10W
R220	1-216-075-00	METAL CHIP	12K	5%	1/10W
R221	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R224	1-216-025-00	METAL CHIP	100	5%	1/10W
R226	1-216-073-00	METAL CHIP	10K	5%	1/10W
R227	1-216-093-00	METAL CHIP	68K	5%	1/10W
R228	1-216-085-00	METAL CHIP	33K	5%	1/10W
R229	1-216-089-00	METAL CHIP	47K	5%	1/10W
R230	1-216-083-00	METAL CHIP	27K	5%	1/10W
R231	1-216-049-00	METAL CHIP	1K	5%	1/10W
R232	1-216-091-00	METAL CHIP	56K	5%	1/10W
R233	1-216-091-00	METAL CHIP	56K	5%	1/10W
R234	1-216-073-00	METAL CHIP	10K	5%	1/10W
R236	1-216-077-00	METAL CHIP	15K	5%	1/10W
R237	1-216-077-00	METAL CHIP	15K	5%	1/10W
R238	1-216-085-00	METAL CHIP	33K	5%	1/10W
R239	1-216-121-00	METAL CHIP	1M	5%	1/10W
R240	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R241	1-216-109-00	METAL CHIP	330K	5%	1/10W
R242	1-216-033-00	METAL CHIP	220	5%	1/10W
R243	1-216-081-00	METAL CHIP	22K	5%	1/10W
R244	1-216-073-00	METAL CHIP	10K	5%	1/10W
R301	1-216-025-00	METAL CHIP	100	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R303	1-216-025-00	METAL CHIP	100	5%	1/10W
R304	1-216-091-00	METAL CHIP	56K	5%	1/10W
R306	1-216-081-00	METAL CHIP	22K	5%	1/10W
R309	1-216-089-00	METAL CHIP	47K	5%	1/10W
R310	1-216-088-00	METAL CHIP	43K	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-025-00	METAL CHIP	100	5%	1/10W
R315	1-216-025-00	METAL CHIP	100	5%	1/10W
R316	1-216-093-00	METAL CHIP	68K	5%	1/10W
R317	1-216-093-00	METAL CHIP	68K	5%	1/10W
R318	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R319	1-216-089-00	METAL CHIP	47K	5%	1/10W
R320	1-216-073-00	METAL CHIP	10K	5%	1/10W
R321	1-216-085-00	METAL CHIP	33K	5%	1/10W
R322 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R323	1-216-089-00	METAL CHIP	47K	5%	1/10W
R324	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
C755	1-163-135-00	CERAMIC CHIP 560PF 5%	50V
C756	1-163-108-00	CERAMIC CHIP 43PF 5%	50V
C757	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C758	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C759	1-126-163-11	ELECT 4.7uF 20%	50V
C760	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C761	1-126-163-11	ELECT 4.7uF 20%	50V
C762	1-163-011-11	CERAMIC CHIP 0.0015uF 10%	50V
C763	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C764	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V
C765	1-163-135-00	CERAMIC CHIP 560PF 5%	50V
C766	1-163-108-00	CERAMIC CHIP 43PF 5%	50V
C767	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C768	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C769	1-126-163-11	ELECT 4.7uF 20%	50V
C770	1-126-044-11	ELECT 1uF 20%	50V
C771	1-124-994-11	ELECT 100uF 20%	10V
C772	1-126-025-11	ELECT 330uF 20%	25V
C773	1-124-994-11	ELECT 100uF 20%	10V
C774	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C775	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C776	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C777	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C778	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C779	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
		< CONNECTOR >	
CN301 *	1-506-990-11	PIN, CONNECTOR (PC BOARD) 8P	
CN302 *	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
CN303 *	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN304	1-569-833-11	SOCKET, CONNECTOR 5P	
CN305	1-569-846-11	SOCKET, CONNECTOR 18P	
CN306 *	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN701	1-569-907-11	SOCKET, CONNECTOR 12P	
CN702	1-565-856-11	SOCKET, CONNECTOR 8P	
CN703 *	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	
CN704	1-569-907-11	SOCKET, CONNECTOR 12P	
CN705	1-569-901-11	SOCKET, CONNECTOR 5P	
		< DIODE >	
D301	8-719-404-46	DIODE MA110	
D701	8-719-404-46	DIODE MA110	
D702	8-719-404-46	DIODE MA110	
D703	8-719-404-52	DIODE MA143	
D704	8-719-800-76	DIODE 1SS226	
D705	8-719-404-46	DIODE MA110	
D706	8-719-400-56	DIODE MA3062-H	
D707	8-719-404-46	DIODE MA110	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC301	8-759-154-34	IC uPC1330GR	
IC302	8-759-932-80	IC BA328	
IC303	8-752-032-14	IC CXA1102M	
IC304	8-759-800-33	IC LC7815H	
IC305	8-752-038-00	IC CXA1298AP	
IC306	8-759-710-55	IC NJM2100M	
IC307	8-759-710-55	IC NJM2100M	
IC701	8-752-032-32	IC CXA1182Q-Z	
IC702	8-752-335-92	IC CXD1167Q	
IC703	8-759-981-92	IC RC4558M	
IC704	8-759-148-30	IC uPD6376GS	
IC705	8-759-634-07	IC M51591FP	
IC706	8-759-513-09	IC BA6294-UV3	
IC707	8-759-513-09	IC BA6294-UV3	
		< COIL >	
L101	1-409-481-21	COIL, TRAP 12mH	
L102	1-410-776-11	INDUCTOR 12mH	
L201	1-409-481-21	COIL, TRAP 12mH	
L202	1-410-776-11	INDUCTOR 12mH	
L301	1-408-426-00	INDUCTOR 270uH	
L701	1-410-369-11	INDUCTOR CHIP 1uH	
L702	1-410-375-11	INDUCTOR CHIP 3.3uH	
L703	1-410-375-11	INDUCTOR CHIP 3.3uH	
L704	1-410-375-11	INDUCTOR CHIP 3.3uH	
		< LINK >	
PS301 ⚠	1-576-122-21	LINK, IC	
PS302 ⚠	1-576-123-21	LINK, IC	
		< TRANSISTOR >	
Q101	8-729-920-31	TRANSISTOR DTC343TK	
Q102	8-729-902-99	TRANSISTOR DTC114TK	
Q103	8-729-920-31	TRANSISTOR DTC343TK	
Q104	8-729-900-52	TRANSISTOR DTC114YK	
Q105	8-729-902-99	TRANSISTOR DTC114TK	
Q106	8-729-100-66	TRANSISTOR 2SC1623	
Q201	8-729-920-31	TRANSISTOR DTC343TK	
Q202	8-729-902-99	TRANSISTOR DTC114TK	
Q203	8-729-920-31	TRANSISTOR DTC343TK	
Q204	8-729-900-52	TRANSISTOR DTC114YK	
Q205	8-729-902-99	TRANSISTOR DTC114TK	
Q206	8-729-100-66	TRANSISTOR 2SC1623	
Q301	8-729-900-52	TRANSISTOR DTC114YK	
Q302	8-729-101-07	TRANSISTOR 2SB798-DL	
Q303	8-729-902-99	TRANSISTOR DTC114TK	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
RV203	1-238-603-11	RES, ADJ, CARBON 100K	
RV301	1-238-999-11	RES, VAR 100K/100K (BASS)	
RV302	1-238-999-11	RES, VAR 100K/100K (TREBLE)	
RV701	1-238-601-11	RES, ADJ, CARBON 22K	
RV702	1-238-602-11	RES, ADJ, CARBON 47K	
RV703	1-241-109-11	RES, ADJ, CERMET 2.2K	
RV704	1-241-109-11	RES, ADJ, CERMET 2.2K	
		< TRANSFORMER >	
T301	1-433-325-11	TRANSFORMER, BIAS OSCILLATION	
		< TEST PIN >	
TP701	* 1-560-468-00	PIN, CONNECTOR 5P	
TP703	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
TP704	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
		< CRYSTAL >	
XF701	1-567-908-11	VIBRATOR, CRYSTAL 16.9344MHz	

****

* 1-635-077-21 BATTERY TERMINAL BOARD
****

Ref. No.	Part No.	Description	Remark
	3-363-201-01	SPRING (-), BATTERY COIL	
	4-932-611-01	TERMINAL (BTM)	
		< CONNECTOR >	
CN907	* 1-569-973-11	PIN, CONNECTOR (PC BOARD) 2P	

****

* A-3261-455-A CD MOTOR BOARD, COMPLETE
****

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C700	1-130-483-00	MYLAR 0.01uF 5% 50V	
C787	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C788	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C789	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C790	1-124-635-00	ELECT 220uF 20% 6.3V	
C791	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C792	1-124-229-00	ELECT 33uF 20% 10V	
C793	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C794	1-126-177-11	ELECT 100uF 20% 10V	
C795	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C796	1-131-374-00	TANTALUM 33uF 10% 16V	
C797	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C798	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C799	1-124-229-00	ELECT 33uF 20% 10V	
		< CONNECTOR >	
CN791	1-569-907-11	SOCKET, CONNECTOR 12P	
CN792	1-565-856-11	SOCKET, CONNECTOR 8P	
CN793	1-569-952-31	CONNECTOR, FLEXIBLE 4P	
CN794	1-569-954-31	CONNECTOR, FLEXIBLE 12P	
		< IC >	
IC791	8-752-033-14	IC CXA1081Q	
		< TRANSISTOR >	
Q791	8-729-801-84	TRANSISTOR 2SB1013-4	
		< RESISTOR >	
R791	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R792	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R793	1-216-024-00	METAL GLAZE 91 5% 1/10W	
R794	1-216-009-00	METAL CHIP 22 5% 1/10W	
R795	1-216-081-00	METAL CHIP 22K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV791	1-241-040-21	RES, ADJ, CARBON 22K	
RV792	1-237-288-11	RES, ADJ, CARBON 47K	

****

* A-3261-459-A CONTROL BOARD, COMPLETE
****

Ref. No.	Part No.	Description	Remark
	* 3-363-190-01	FILTER, E.L	
		< CAPACITOR >	
C165	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C265	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C360	1-130-470-00	MYLAR 820PF 5% 50V	
C361	1-130-467-00	MYLAR 470PF 5% 50V	
C401	1-126-157-11	ELECT 10uF 20% 16V	
C402	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C403	1-124-465-00	ELECT 0.47uF 20% 50V	
C404	1-126-163-11	ELECT 4.7uF 20% 50V	
C405	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C406	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C407	1-124-635-00	ELECT 220uF 20% 6.3V	
C408	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C409	1-126-154-11	ELECT 47uF 20% 6.3V	
C410	1-126-154-11	ELECT 47uF 20% 6.3V	
C411	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	

Ref. No.	Part No.	Description			Remark
R325	1-216-073-00	METAL CHIP	10K	5%	1/10W
R326	1-216-142-00	METAL GLAZE	4.7	5%	1/8W
R327	1-216-156-00	METAL GLAZE	18	5%	1/8W
R328	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R329	1-216-017-00	METAL CHIP	47	5%	1/10W
R330	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R331	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R332	1-216-025-00	METAL CHIP	100	5%	1/10W
R333	1-216-089-00	METAL CHIP	47K	5%	1/10W
R334	1-216-073-00	METAL CHIP	10K	5%	1/10W
R335	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R701	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R702	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R703	1-216-097-00	METAL CHIP	100K	5%	1/10W
R704	1-216-103-00	METAL CHIP	180K	5%	1/10W
R705	1-216-097-00	METAL CHIP	100K	5%	1/10W
R706	1-216-095-00	METAL CHIP	82K	5%	1/10W
R707	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R708	1-216-121-00	METAL CHIP	1M	5%	1/10W
R709	1-216-097-00	METAL CHIP	100K	5%	1/10W
R710	1-216-074-00	METAL GLAZE	11K	5%	1/10W
R712	1-216-097-00	METAL CHIP	100K	5%	1/10W
R713	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R714	1-216-104-00	METAL CHIP	200K	5%	1/10W
R715	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R716	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R717	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R718	1-216-089-00	METAL CHIP	47K	5%	1/10W
R719	1-216-073-00	METAL CHIP	10K	5%	1/10W
R720	1-216-049-00	METAL CHIP	1K	5%	1/10W
R721	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R722	1-216-049-00	METAL CHIP	1K	5%	1/10W
R723	1-216-073-00	METAL CHIP	10K	5%	1/10W
R724	1-216-097-00	METAL CHIP	100K	5%	1/10W
R725	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R726	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R727	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R728	1-216-097-00	METAL CHIP	100K	5%	1/10W
R729	1-216-097-00	METAL CHIP	100K	5%	1/10W
R730	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R731	1-216-089-00	METAL CHIP	47K	5%	1/10W
R732	1-216-097-00	METAL CHIP	100K	5%	1/10W
R733	1-216-095-00	METAL CHIP	82K	5%	1/10W
R734	1-216-097-00	METAL CHIP	100K	5%	1/10W
R735	1-216-049-00	METAL CHIP	1K	5%	1/10W
R736	1-216-049-00	METAL CHIP	1K	5%	1/10W
R737	1-216-097-00	METAL CHIP	100K	5%	1/10W
R738	1-216-113-00	METAL CHIP	470K	5%	1/10W
R739	1-216-111-00	METAL CHIP	390K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R740	1-216-097-00	METAL CHIP	100K	5%	1/10W
R741	1-216-113-00	METAL CHIP	470K	5%	1/10W
R742	1-216-081-00	METAL CHIP	22K	5%	1/10W
R743	1-216-005-00	METAL CHIP	15	5%	1/10W
R744	1-216-005-00	METAL CHIP	15	5%	1/10W
R745	1-216-025-00	METAL CHIP	100	5%	1/10W
R746	1-216-043-00	METAL CHIP	560	5%	1/10W
R747	1-216-081-00	METAL CHIP	22K	5%	1/10W
R748	1-216-033-00	METAL CHIP	220	5%	1/10W
R749	1-216-025-00	METAL CHIP	100	5%	1/10W
R751	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R752	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W
R753	1-216-681-11	METAL CHIP	18K	0.5%	1/10W
R754	1-216-666-11	METAL CHIP	4.3K	0.5%	1/10W
R755	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R756	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R757	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R758	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R761	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R762	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W
R763	1-216-681-11	METAL CHIP	18K	0.5%	1/10W
R764	1-216-666-11	METAL CHIP	4.3K	0.5%	1/10W
R765	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R766	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R767	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R768	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R769	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R770	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R771	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R772	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R773	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R774	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R775	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R776	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R777	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R778	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R779	1-216-688-11	METAL CHIP	36K	0.5%	1/10W
R780	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R781	1-216-696-11	METAL CHIP	75K	0.5%	1/10W
R782	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R783	1-216-049-00	METAL CHIP	1K	5%	1/10W
R784	1-216-113-00	METAL CHIP	470K	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV101	1-238-601-11	RES, ADJ, CARBON 22K
RV102	1-238-599-11	RES, ADJ, CARBON 4.7K
RV103	1-238-603-11	RES, ADJ, CARBON 100K
RV201	1-238-601-11	RES, ADJ, CARBON 22K
RV202	1-238-599-11	RES, ADJ, CARBON 4.7K

CONTROL

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D401	8-719-104-34	DIODE 1S2836	
D402	8-719-404-46	DIODE MA110	
D403	8-719-404-46	DIODE MA110	
D404	8-719-404-46	DIODE MA110	
D405	8-719-400-18	DIODE MA152WK	
D406	8-719-986-93	DIODE PY7851K (CD)	
D407	8-719-986-93	DIODE PY7851K (RADIO)	
D408	8-719-986-93	DIODE PY7851K (TAPE)	
D409	8-719-404-46	DIODE MA110	
D410	8-719-400-18	DIODE MA152WK	
D411	8-719-400-18	DIODE MA152WK	
D412	8-719-400-18	DIODE MA152WK	
D413	8-719-800-76	DIODE 1SS226	
D414	8-719-400-18	DIODE MA152WK	
D415	8-719-986-93	DIODE PY7851K (POWER)	
D416	8-719-800-76	DIODE 1SS226	
D417	8-719-404-46	DIODE MA110	
D422	8-719-404-46	DIODE MA110	
D424	8-719-404-46	DIODE MA110	
D425	8-719-404-46	DIODE MA110	
D426	8-719-400-18	DIODE MA152WK	
D427	8-719-404-46	DIODE MA110	
D428	8-719-980-98	DIODE MVR3371X (STANDBY/OPR/BATT)	
D430	8-719-400-18	DIODE MA152WK	
D497	8-719-106-16	DIODE RD6.8M-B1	
D501	8-719-404-35	DIODE MA141WK	
D502	8-719-404-35	DIODE MA141WK	
D503	8-719-404-35	DIODE MA141WK	
D504	8-719-404-35	DIODE MA141WK	
D505	8-719-404-46	DIODE MA110	
D509	8-719-404-46	DIODE MA110	
D510	8-719-404-46	DIODE MA110	
D511	8-719-404-46	DIODE MA110	
D512	8-719-404-46	DIODE MA110	
D513	8-719-404-46	DIODE MA110	
D514	8-719-404-46	DIODE MA110	
D515	8-719-404-46	DIODE MA110	
D517	8-719-404-46	DIODE MA110	
D520	8-719-980-98	DIODE MVR3371X (FM ST)	
D521	8-719-970-07	DIODE MPG3371X-150 (TUNING)	
D609	8-719-970-07	DIODE MPG3371X-150 (◁)	
D610	8-719-970-07	DIODE MPG3371X-150 (▷)	
D611	8-719-985-18	DIODE MAY3371X (▮▮)	
D612	8-719-980-98	DIODE MVR3371X (●)	
D613	8-719-400-18	DIODE MA152WK	
D614	8-719-404-46	DIODE MA110	
D615	8-719-404-46	DIODE MA110	
D616	8-719-404-46	DIODE MA110	
D617	8-719-404-46	DIODE MA110	
D618	8-719-404-46	DIODE MA110	
D619	8-719-404-46	DIODE MA110	
D620	8-719-400-18	DIODE MA152WK	
D621	8-719-400-18	DIODE MA152WK	
D622	8-719-404-46	DIODE MA110	
D624	8-719-400-18	DIODE MA152WK	
D625	8-719-404-46	DIODE MA110	
D662	8-719-404-46	DIODE MA110	
D666	8-719-404-46	DIODE MA110	
D801	8-719-404-46	DIODE MA110	
D802	8-719-404-46	DIODE MA110	
D803	8-719-404-46	DIODE MA110	
D804	8-719-404-46	DIODE MA110	
		< EL LUMINOUS ELEMENT >	
EL401	1-519-612-11	ELEMENT, EL LUMINOUS	
		< IC >	
IC401	8-759-634-33	IC M50720-192SP	
IC402	8-759-987-44	IC SC17710YBA	
IC403	8-759-504-40	IC S-80741AL-A5-S	
IC404	8-759-987-44	IC SC17710YBA	
IC405	8-741-100-47	IC SBX1610-09	
IC406	8-759-990-47	IC SC17710YDA	
IC407	8-759-511-42	IC S-80730AN	
IC408	8-759-987-44	IC SC17710YBA	
IC503	8-759-150-93	IC uPD1724GB-525-1A7	
IC601	8-759-239-76	IC TC9315F	
IC801	8-752-819-29	IC CXP5078-063Q	
IC802	8-759-970-47	IC PST529J	
		< JACK >	
J401	1-569-565-21	JACK (HEADPHONES)	
		< COIL >	
L401	1-412-006-31	INDUCTOR CHIP 10uH	
L402	1-412-006-31	INDUCTOR CHIP 10uH	
L403	1-412-006-31	INDUCTOR CHIP 10uH	
L405	1-412-006-31	INDUCTOR CHIP 10uH	
L406	1-412-006-31	INDUCTOR CHIP 10uH	
L407	1-412-006-31	INDUCTOR CHIP 10uH	
L408	1-412-006-31	INDUCTOR CHIP 10uH	
L409	1-412-006-31	INDUCTOR CHIP 10uH	

CONTROL

Ref. No.	Part No.	Description			Remark
C412	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C413	1-126-916-11	ELECT	1000uF	20%	6.3V
C414	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C415	1-131-370-00	TANTALUM	6.8uF	10%	16V
C416	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C417	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C423	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C424	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C425	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C426	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C427	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C429	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C430	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C431	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C432	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C433	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C434	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C435	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C436	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C437	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C438	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C439	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C440	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C441	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C442	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C443	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C444	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C445	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C446	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C447	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C448	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C449	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C450	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C497	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C498	1-126-177-11	ELECT	100uF	20%	10V
C499	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C501	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C502	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C503	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C504	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C505	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C506	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C507	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C508	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C509	1-126-177-11	ELECT	100uF	20%	10V
C510	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C511	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C512	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C514	1-136-153-00	FILM	0.01uF	5%	50V
C515	1-136-175-00	FILM	0.68uF	5%	50V
C516	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C517	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C518	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C519	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C520	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C521	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C522	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C523	1-124-635-00	ELECT	220uF	20%	6.3V
C524	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C525	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C529	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C530	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C531	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C532	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C533	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C603	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C604	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C605	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C611	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C801	1-126-154-11	ELECT	47uF	20%	6.3V
C802	1-126-154-11	ELECT	47uF	20%	6.3V
C804	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C805	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C806	1-124-635-00	ELECT	220uF	20%	6.3V
C807	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C808	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C815	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C816	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C817	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< FILTER >			
CF801	1-567-818-21	VIBRATOR, CERAMIC 3.58MHz			
		< CONNECTOR >			
CN354	* 1-564-719-61	PIN, CONNECTOR (SMALL TYPE) 3P			
CN401	1-569-913-11	SOCKET, CONNECTOR 20P			
CN402	1-569-846-11	SOCKET, CONNECTOR 18P			
CN403	* 1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CN404	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN501	1-569-909-11	SOCKET, CONNECTOR 15P			
CN502	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CN601	1-580-529-21	SOCKET, CONNECTOR 25P			
CN602	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN801	1-569-954-31	CONNECTOR, FLEXIBLE 12P			
CN802	1-580-109-11	CONNECTOR, FLEXIBLE 5P			
CN803	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			

CONTROL

Ref. No.	Part No.	Description				Remark
R423	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R430	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R431	1-216-023-00	METAL CHIP	82	5%	1/10W	
R432	1-216-025-00	METAL CHIP	100	5%	1/10W	
R433	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R434	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R435	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R436	1-216-034-00	METAL CHIP	240	5%	1/10W	
R438	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R439	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R497	1-216-037-00	METAL CHIP	330	5%	1/10W	
R501	1-216-017-00	METAL CHIP	47	5%	1/10W	
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R503	1-216-022-00	METAL CHIP	75	5%	1/10W	
R505	1-216-045-00	METAL CHIP	680	5%	1/10W	
R507	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R509	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R510	1-216-043-00	METAL CHIP	560	5%	1/10W	
R511	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R513	1-216-013-00	METAL CHIP	33	5%	1/10W	
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R519	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R520	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R521	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R522	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R523	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R524	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R527	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R528	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R529	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R531	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R532	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R533	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R534	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R535	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R536	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R537	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R538	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R539	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R540	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R541	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R543	1-216-037-00	METAL CHIP	330	5%	1/10W	
R544	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R545	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R546	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R547	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R567	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R570	1-216-041-00	METAL CHIP	470	5%	1/10W	
R601	1-216-049-00	METAL CHIP	1K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R605	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R606	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R607	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R626	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R627	1-216-041-00	METAL CHIP	470	5%	1/10W	
R628	1-216-041-00	METAL CHIP	470	5%	1/10W	
R629	1-216-041-00	METAL CHIP	470	5%	1/10W	
R630	1-216-041-00	METAL CHIP	470	5%	1/10W	
R631	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R632	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R634	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R637	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R647	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R648	1-216-062-00	METAL CHIP	3.6K	5%	1/10W	
R649	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R801	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R802	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R803	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R804	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R805	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R806	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R807	1-216-025-00	METAL CHIP	100	5%	1/10W	
R808	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R809	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R810	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R812	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R813	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R815	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R816	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R817	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R818	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R819	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R820	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R821	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R822	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R823	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R824	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R825	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R826	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R827	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R828	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R829	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R830	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R831	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R832	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R833	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R834	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R835	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	

Ref. No.	Part No.	Description	Remark
L411	1-412-006-31	INDUCTOR CHIP 10uH	
L412	1-412-006-31	INDUCTOR CHIP 10uH	
L413	1-410-216-31	INDUCTOR CHIP 100uH	
L414	1-412-006-31	INDUCTOR CHIP 10uH	
L415	1-412-006-31	INDUCTOR CHIP 10uH	
L416	1-410-216-31	INDUCTOR CHIP 100uH	
L417	1-410-658-31	INDUCTOR, CHIP 220uH	
L501	1-410-216-31	INDUCTOR CHIP 100uH	
L502	1-410-997-31	INDUCTOR CHIP 2.2uH	
L601	1-412-006-31	INDUCTOR CHIP 10uH	
L801	1-410-216-31	INDUCTOR CHIP 100uH	
		< LIQUID CRYSTAL DISPLAY PANEL >	
ND501	1-809-284-11	DISPLAY PANEL, LIQUID CRYSTAL	
ND801	1-808-996-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< LINK >	
PS401 ⚠	1-576-122-21	LINK, IC	
		< TRANSISTOR >	
Q401	8-729-923-65	TRANSISTOR DTA143ZK	
Q402	8-729-923-65	TRANSISTOR DTA143ZK	
Q403	8-729-923-65	TRANSISTOR DTA143ZK	
Q404	8-729-923-65	TRANSISTOR DTA143ZK	
Q405	8-729-923-65	TRANSISTOR DTA143ZK	
Q406	8-729-923-65	TRANSISTOR DTA143ZK	
Q407	8-729-923-65	TRANSISTOR DTA143ZK	
Q408	8-729-902-99	TRANSISTOR DTC114TK	
Q409	8-729-902-99	TRANSISTOR DTC114TK	
Q410	8-729-923-65	TRANSISTOR DTA143ZK	
Q411	8-729-923-65	TRANSISTOR DTA143ZK	
Q412	8-729-901-03	TRANSISTOR DTC144WK	
Q413	8-729-923-65	TRANSISTOR DTA143ZK	
Q414	8-729-901-03	TRANSISTOR DTC144WK	
Q415	8-729-923-54	TRANSISTOR DTA143TK	
Q416	8-729-901-03	TRANSISTOR DTC144WK	
Q417	8-729-900-52	TRANSISTOR DTC114YK	
Q418	8-729-923-65	TRANSISTOR DTA143ZK	
Q421	8-729-901-03	TRANSISTOR DTC144WK	
Q422	8-729-921-25	TRANSISTOR FMC2	
Q424	8-729-100-66	TRANSISTOR 2SC1623	
Q425	8-729-923-65	TRANSISTOR DTA143ZK	
Q496	8-729-159-64	TRANSISTOR 2SD596	
Q501	8-729-900-52	TRANSISTOR DTC114YK	
Q502	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q503	8-729-109-44	TRANSISTOR 2SK94	
Q504	8-729-100-66	TRANSISTOR 2SC1623	
Q505	8-729-119-32	TRANSISTOR 2SK193	
Q506	8-729-907-03	TRANSISTOR FMG5	

Ref. No.	Part No.	Description	Remark
Q508	8-729-900-51	TRANSISTOR DTA114TK	
Q509	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q511	8-729-900-52	TRANSISTOR DTC114YK	
Q603	8-729-901-46	TRANSISTOR DTA114YK	
Q604	8-729-907-03	TRANSISTOR FMG5	
Q606	8-729-115-30	TRANSISTOR 2SK105A-30	
Q625	8-729-901-46	TRANSISTOR DTA114YK	
Q626	8-729-100-66	TRANSISTOR 2SC1623	
Q627	8-729-902-99	TRANSISTOR DTC114TK	
Q628	8-729-902-99	TRANSISTOR DTC114TK	
Q629	8-729-902-99	TRANSISTOR DTC114TK	
Q630	8-729-900-52	TRANSISTOR DTC114YK	
Q631	8-729-902-99	TRANSISTOR DTC114TK	
Q632	8-729-901-03	TRANSISTOR DTC144WK	
Q633	8-729-907-03	TRANSISTOR FMG5	
Q634	8-729-901-46	TRANSISTOR DTA114YK	
Q637	8-729-900-52	TRANSISTOR DTC114YK	
Q801	8-729-901-05	TRANSISTOR DTA124EK	
Q805	8-729-141-48	TRANSISTOR 2SB624-BV345	
		< RESISTOR >	
R145	1-216-074-00	METAL GLAZE 11K 5% 1/10W	
R146	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R147	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R245	1-216-074-00	METAL GLAZE 11K 5% 1/10W	
R246	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R247	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R401	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R402	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R403	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R404	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R405	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R406	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R407	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R408	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R409	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R410	1-216-184-00	METAL GLAZE 270 5% 1/8W	
R411	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R412	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R413	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R414	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R415	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R416	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R417	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R418	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R419	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R420	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R421	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R422	1-216-184-00	METAL GLAZE 270 5% 1/8W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

DRIVER

Ref. No.	Part No.	Description			Remark
	* A-3261-460-A	DRIVER BOARD, COMPLETE			
		**********************			
		< CAPACITOR >			
C451	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C452	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C453	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C454	1-123-875-11	ELECT	10uF	20%	50V
C455	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C456	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C457	1-123-875-11	ELECT	10uF	20%	50V
C458	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C606	1-124-927-11	ELECT	4.7uF	20%	100V
C607	1-131-349-00	TANTALUM	2.2uF	10%	35V
C608	1-124-791-11	ELECT	1.0uF	20%	100V
C609	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C610	1-124-791-11	ELECT	1.0uF	20%	100V
C651	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C652	1-124-443-00	ELECT	100uF	20%	10V
C653	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C654	1-124-472-11	ELECT	470uF	20%	10V
C655	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C656	1-124-443-00	ELECT	100uF	20%	10V
C657	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C658	1-124-472-11	ELECT	470uF	20%	10V
C659	1-123-875-11	ELECT	10uF	20%	50V
C660	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C662	1-123-875-11	ELECT	10uF	20%	50V
C663	1-126-233-11	ELECT	22uF	20%	50V
C664	1-124-791-11	ELECT	1.0uF	20%	100V
C665	1-126-233-11	ELECT	22uF	20%	50V
C666	1-123-875-11	ELECT	10uF	20%	50V
C667	1-124-902-00	ELECT	0.47uF	20%	50V
C668	1-123-875-11	ELECT	10uF	20%	50V
C669	1-124-902-00	ELECT	0.47uF	20%	50V
C670	1-124-791-11	ELECT	1.0uF	20%	100V
C672	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C673	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C674	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C675	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN453	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN651	1-569-853-11	SOCKET, CONNECTOR 25P			
CN652	1-569-845-11	SOCKET, CONNECTOR 17P			

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D451	8-719-934-21	DIODE HZS30-1L	
D452	8-719-404-46	DIODE MA110	
D623	8-719-404-46	DIODE MA110	
D651	8-719-106-36	DIODE RD8.2M-B3	
D653	8-719-911-19	DIODE 1SS119	
D654	8-719-911-19	DIODE 1SS119	
D655	8-719-106-36	DIODE RD8.2M-B3	
D657	8-719-400-18	DIODE MA152WK	
D660	8-719-911-19	DIODE 1SS119	
D661	8-719-400-18	DIODE MA152WK	
D663	8-719-404-46	DIODE MA110	
D664	8-719-404-46	DIODE MA110	
D665	8-719-104-34	DIODE 1S2836	
D667	8-719-404-46	DIODE MA110	
D668	8-719-105-38	DIODE RD3.0M-B1	
		< IC >	
IC602	8-759-933-22	IC BA3707	
IC651	8-759-503-60	IC S-80740AN-D4-S	
		< COIL >	
L451	1-410-216-31	INDUCTOR CHIP 100uH	
L452	1-410-216-31	INDUCTOR CHIP 100uH	
		< LINK >	
PS651 ⚠	1-532-679-00	LINK, IC ICP-N15 (0.6A)	
PS652 ⚠	1-532-679-00	LINK, IC ICP-N15 (0.6A)	
		< TRANSISTOR >	
Q451	8-729-903-10	TRANSISTOR FMW1	
Q635	8-729-900-52	TRANSISTOR DTC114YK	
Q651	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q652	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q653	8-729-920-31	TRANSISTOR DTC343TK	
Q654	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q655	8-729-159-64	TRANSISTOR 2SD596	
Q656	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q657	8-729-159-64	TRANSISTOR 2SD596	
Q658	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q659	8-729-101-07	TRANSISTOR 2SB798-DL	
Q660	8-729-900-52	TRANSISTOR DTC114YK	
Q661	8-729-901-03	TRANSISTOR DTC144WK	
Q662	8-729-901-00	TRANSISTOR DTC124EK	
Q663	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q664	8-729-901-46	TRANSISTOR DTA114YK	
Q665	8-729-900-52	TRANSISTOR DTC114YK	
Q666	8-729-902-99	TRANSISTOR DTC114TK	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

CONTROL

Ref. No.	Part No.	Description	Remark
R836	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R837	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R838	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R839	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R840	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R841	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R842	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R843	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R844	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R845	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R846	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R847	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R848	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R849	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R850	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R851	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R852	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R853	1-216-049-00	METAL CHIP 1K 5% 1/10W	

< VARIABLE RESISTOR >

RV601	1-241-177-21	RES, ADJ, CERMET 2.2K	
RV602	1-241-178-21	RES, ADJ, CERMET 4.7K	
RV603	1-241-145-11	RES, ADJ, CERMET 47K	

< SWITCH >

S351	1-572-378-21	SWITCH, SLIDE (ISS)	
S401	1-572-200-11	SWITCH, KEYBOARD (POWER)	
S402	1-572-200-11	SWITCH, KEYBOARD (TAPE)	
S403	1-572-200-11	SWITCH, KEYBOARD (RADIO)	
S404	1-572-200-11	SWITCH, KEYBOARD (CD)	
S405	1-572-347-21	SWITCH, SLIDE (TIMER MODE (TAPE))	
S406	1-572-347-21	SWITCH, SLIDE (DOLBY)	
S407	1-572-347-21	SWITCH, SLIDE (CD DUB SPEED)	
S501	1-572-200-11	SWITCH, KEYBOARD (MEMORY)	
S502	1-572-200-11	SWITCH, KEYBOARD (3)	
S503	1-572-200-11	SWITCH, KEYBOARD (2)	
S504	1-572-200-11	SWITCH, KEYBOARD (1)	
S506	1-572-200-11	SWITCH, KEYBOARD (6)	
S507	1-572-200-11	SWITCH, KEYBOARD (5)	
S508	1-572-200-11	SWITCH, KEYBOARD (4)	
S510	1-572-200-11	SWITCH, KEYBOARD (7)	
S515	1-572-200-11	SWITCH, KEYBOARD (BAND)	
S516	1-572-377-21	SWITCH, SLIDE (FM SENS)	
S517	1-572-348-21	SWITCH, SLIDE (FM MODE)	
S570	1-572-200-11	SWITCH, KEYBOARD (TUNING -)	
S571	1-572-200-11	SWITCH, KEYBOARD (TUNING +)	
S601	1-572-348-21	SWITCH, SLIDE (CD REC/DIR MODE)	
S602	1-572-200-11	SWITCH, KEYBOARD (◁)	
S603	1-572-200-11	SWITCH, KEYBOARD (□)	

Ref. No.	Part No.	Description	Remark
S604	1-572-200-11	SWITCH, KEYBOARD (▷)	
S605	1-572-200-11	SWITCH, KEYBOARD (AUTO PLAY)	
S606	1-572-200-11	SWITCH, KEYBOARD (◀◀)	
S607	1-572-200-11	SWITCH, KEYBOARD (▶▶)	
S608	1-572-200-11	SWITCH, KEYBOARD (PAUSE)	
S609	1-572-200-11	SWITCH, KEYBOARD (REC)	
S803	1-572-200-11	SWITCH, KEYBOARD (□)	
S804	1-572-200-11	SWITCH, KEYBOARD (□□)	
S805	1-572-200-11	SWITCH, KEYBOARD (▷)	
S806	1-572-200-11	SWITCH, KEYBOARD (SEND ⏮)	
S807	1-572-200-11	SWITCH, KEYBOARD (SEND ⏭)	
S808	1-572-200-11	SWITCH, KEYBOARD (INTRO SCAN	
S809	1-572-200-11	SWITCH, KEYBOARD (PGM CHECK	
S810	1-572-200-11	SWITCH, KEYBOARD (+10)	
S811	1-572-200-11	SWITCH, KEYBOARD (CLOCK)	
S812	1-572-200-11	SWITCH, KEYBOARD (TIMER)	
S813	1-572-200-11	SWITCH, KEYBOARD (SLEEP)	
S814	1-572-200-11	SWITCH, KEYBOARD (STANDBY)	
S815	1-572-200-11	SWITCH, KEYBOARD (DISPLAY)	
S816	1-572-200-11	SWITCH, KEYBOARD (EDIT/CLEAR)	
S817	1-572-200-11	SWITCH, KEYBOARD (AUTO SPACE)	
S818	1-572-200-11	SWITCH, KEYBOARD (REPEAT 1/ALL)	
S819	1-572-200-11	SWITCH, KEYBOARD (PROGRAM/SHUFFLE)	
S820	1-572-200-11	SWITCH, KEYBOARD (1)	
S821	1-572-200-11	SWITCH, KEYBOARD (2)	
S822	1-572-200-11	SWITCH, KEYBOARD (3)	
S823	1-572-200-11	SWITCH, KEYBOARD (4)	
S824	1-572-200-11	SWITCH, KEYBOARD (5)	
S825	1-572-200-11	SWITCH, KEYBOARD (6)	
S826	1-572-200-11	SWITCH, KEYBOARD (7)	
S827	1-572-200-11	SWITCH, KEYBOARD (8)	
S828	1-572-200-11	SWITCH, KEYBOARD (9)	
S829	1-572-200-11	SWITCH, KEYBOARD (0)	

< TRANSFORMER >

T401	1-450-053-11	TRANSFORMER, INVERTER	

< TEST PIN >

TP801	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
TP802	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	

< CRYSTAL >

X401	1-578-787-21	VIBRATOR, CERAMIC 4.19MHz	
X501	1-577-556-11	VIBRATOR, CRYSTAL 75kHz	
XF801	1-567-098-00	VIBRATOR, CRYSTAL 32.768kHz	

MD SW (K10)

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D691	8-719-974-59	DIODE 1SR139-100	
		< PHOTO INTERRUPTER >	
PH691	8-719-939-11	PHOTO INTERRUPTER GP-2S09-B	
		< SWITCH >	
S691	1-572-248-11	SWITCH, LEAF (P.E.A)	
S692	1-572-248-11	SWITCH, LEAF (P.E.B)	
S693	1-572-248-11	SWITCH, LEAF (CASSETTE DET)	
S694	1-572-248-11	SWITCH, LEAF (120uS/70uS)	
S695	1-571-263-11	SWITCH (HEAD DET)	

****

POWER

* A-3261-452-A POWER BOARD, COMPLETE

****

Ref. No.	Part No.	Description				Remark
	1-533-217-31	HOLDER, FUSE				
	* 1-535-303-00	WIRE, JUMPER				
	* 3-363-880-01	BRACKET (D), HEAT SINK				
	4-938-324-01	HEAT SINK (A)				
	* 4-938-339-01	BRACKET (A), HEAT SINK				
	* 4-938-340-01	BRACKET (B), HEAT SINK				
	7-682-550-04	SCREW +P 3X12				
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3				
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3				
		< CAPACITOR >				
C150	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C151	1-128-261-71	ELECT	10uF	20%	16V	
C152	1-128-261-71	ELECT	10uF	20%	16V	
C153	1-128-262-71	ELECT	47uF	20%	16V	
C154	1-128-263-91	ELECT	1000uF	20%	16V	
C155	1-128-260-91	ELECT	220uF	20%	25V	
C156	1-128-260-91	ELECT	220uF	20%	25V	
C157	1-136-165-00	FILM	0.1uF	5%	50V	
C158	1-136-165-00	FILM	0.1uF	5%	50V	
C159	1-126-401-11	ELECT CHIP	1uF	20%	50V	
C160	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C161	1-126-398-11	ELECT CHIP	4.7uF	20%	35V	
C162	1-123-875-11	ELECT	10uF	20%	50V	
C163	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	
C164	1-128-258-71	ELECT	1uF	20%	50V	
C250	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C251	1-128-261-71	ELECT	10uF	20%	16V	
C252	1-128-261-71	ELECT	10uF	20%	16V	
C253	1-128-262-71	ELECT	47uF	20%	16V	
C254	1-128-263-91	ELECT	1000uF	20%	16V	
C255	1-128-260-91	ELECT	220uF	20%	25V	
C256	1-128-260-91	ELECT	220uF	20%	25V	
C257	1-136-165-00	FILM	0.1uF	5%	50V	
C258	1-136-165-00	FILM	0.1uF	5%	50V	
C259	1-126-401-11	ELECT CHIP	1uF	20%	50V	
C260	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C261	1-126-398-11	ELECT CHIP	4.7uF	20%	35V	
C262	1-123-875-11	ELECT	10uF	20%	50V	
C263	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	
C264	1-128-258-71	ELECT	1uF	20%	50V	
C351	1-128-269-71	ELECT	100uF	20%	10V	
C352	1-128-235-21	ELECT CHIP	0.47uF	20%	50V	
C353	1-128-269-71	ELECT	100uF	20%	10V	
C354	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C355	1-126-392-11	ELECT CHIP	100uF	20%	6.3V	
C356	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C451	1-124-443-00	ELECT	100uF	20%	10V	
C901	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C902	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C903	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C904	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C905	1-125-634-11	ELECT	4700uF	20%	25V	
C906	1-124-791-11	ELECT	1.0uF	20%	100V	
C907	1-128-264-91	ELECT	220uF	20%	10V	
C908	1-126-803-11	ELECT	47uF	20%	25V	
C909	1-128-264-91	ELECT	220uF	20%	10V	
C910	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C911	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C912	1-126-336-11	ELECT	220uF	20%	25V	
		< CONNECTOR >				
CN151	* 1-569-973-11	PIN, CONNECTOR (PC BOARD) 2P				
CN251	* 1-569-973-11	PIN, CONNECTOR (PC BOARD) 2P				
CN351	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P				
CN352	1-569-833-11	SOCKET, CONNECTOR 5P				
CN353	1-569-848-11	SOCKET, CONNECTOR 20P				
CN451	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				
CN902	* 1-569-974-11	PIN, CONNECTOR (PC BOARD) 3P				
CN903	* 1-569-973-11	PIN, CONNECTOR (PC BOARD) 2P				
CN904	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				
CN906	* 1-580-141-11	PIN, CONNECTOR (PC BOARD) 2P				
		< DIODE >				
D350	8-719-911-19	DIODE 1SS119				
D351	8-719-400-18	DIODE MA152WK				
D901	8-719-302-38	DIODE RBV-602-01				
D903	8-719-911-19	DIODE 1SS119				

DRIVER INLET MD SW (K10)

Ref. No.	Part No.	Description			Remark
Q667	8-729-100-66	TRANSISTOR 2SC1623			
Q668	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q669	8-729-159-64	TRANSISTOR 2SD596			
Q670	8-729-901-00	TRANSISTOR DTC124EK			
Q671	8-729-901-46	TRANSISTOR DTA114YK			
Q672	8-729-901-03	TRANSISTOR DTC144WK			
Q673	8-729-923-04	TRANSISTOR DTC123YK			
Q674	8-729-901-03	TRANSISTOR DTC144WK			
Q675	8-729-902-99	TRANSISTOR DTC114TK			
Q676	8-729-902-99	TRANSISTOR DTC114TK			
Q677	8-729-902-99	TRANSISTOR DTC114TK			
Q678	8-729-100-66	TRANSISTOR 2SC1623			
Q679	8-729-900-52	TRANSISTOR DTC114YK			
Q680	8-729-900-52	TRANSISTOR DTC114YK			
Q681	8-729-900-52	TRANSISTOR DTC114YK			
Q682	8-729-901-03	TRANSISTOR DTC144WK			
Q683	8-729-901-03	TRANSISTOR DTC144WK			

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R451	1-216-089-00	METAL CHIP	47K	5%	1/10W
R452	1-216-095-00	METAL CHIP	82K	5%	1/10W
R453	1-216-097-00	METAL CHIP	100K	5%	1/10W
R454	1-216-025-00	METAL CHIP	100	5%	1/10W
R640	1-216-073-00	METAL CHIP	10K	5%	1/10W
R641	1-216-093-00	METAL CHIP	68K	5%	1/10W
R642	1-216-097-00	METAL CHIP	100K	5%	1/10W
R643	1-216-073-00	METAL CHIP	10K	5%	1/10W
R644	1-216-111-00	METAL CHIP	390K	5%	1/10W
R645	1-216-089-00	METAL CHIP	47K	5%	1/10W
R650	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R651	1-216-029-00	METAL CHIP	150	5%	1/10W
R652	1-216-041-00	METAL CHIP	470	5%	1/10W
R653	1-216-097-00	METAL CHIP	100K	5%	1/10W
R654	1-216-049-00	METAL CHIP	1K	5%	1/10W
R655	1-216-049-00	METAL CHIP	1K	5%	1/10W
R656	1-216-049-00	METAL CHIP	1K	5%	1/10W
R657	1-216-097-00	METAL CHIP	100K	5%	1/10W
R658	1-216-049-00	METAL CHIP	1K	5%	1/10W
R659	1-216-029-00	METAL CHIP	150	5%	1/10W
R660	1-216-049-00	METAL CHIP	1K	5%	1/10W
R662	1-216-748-11	METAL CHIP	39K	5%	1/10W
R663	1-216-039-00	METAL CHIP	390	5%	1/10W
R664	1-216-101-00	METAL CHIP	150K	5%	1/10W
R665	1-216-037-00	METAL CHIP	330	5%	1/10W
R666	1-216-073-00	METAL CHIP	10K	5%	1/10W
R670	1-216-073-00	METAL CHIP	10K	5%	1/10W
R671	1-216-097-00	METAL CHIP	100K	5%	1/10W
R672	1-216-049-00	METAL CHIP	1K	5%	1/10W
R674	1-216-049-00	METAL CHIP	1K	5%	1/10W
R675	1-216-073-00	METAL CHIP	10K	5%	1/10W
R677	1-216-049-00	METAL CHIP	1K	5%	1/10W
R682	1-216-089-00	METAL CHIP	47K	5%	1/10W
R683	1-216-089-00	METAL CHIP	47K	5%	1/10W
R684	1-216-025-00	METAL CHIP	100	5%	1/10W
R685	1-216-089-00	METAL CHIP	47K	5%	1/10W
R686	1-216-073-00	METAL CHIP	10K	5%	1/10W
R687	1-216-748-11	METAL CHIP	39K	5%	1/10W
R688	1-216-091-00	METAL CHIP	56K	5%	1/10W
R689	1-216-097-00	METAL CHIP	100K	5%	1/10W
R690	1-216-097-00	METAL CHIP	100K	5%	1/10W
R691	1-216-081-00	METAL CHIP	22K	5%	1/10W
R692	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R693	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R694	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R695	1-216-073-00	METAL CHIP	10K	5%	1/10W
R696	1-216-073-00	METAL CHIP	10K	5%	1/10W

< TRANSFORMER >

Ref. No.	Part No.	Description
T451	1-450-126-21	TRANSFORMER, DC-DC CONVERTER

****

* 1-635-076-21 INLET BOARD
****

< CONNECTOR >

Ref. No.		Part No.	Description
CN901	*	1-569-974-11	PIN, CONNECTOR (PC BOARD) 3P
CN905	*	1-569-715-11	PIN, CONNECTOR (PC BOARD) 2P

< JACK >

Ref. No.		Part No.	Description
J901	⚠	1-526-838-11	INLET, AC 2P (~AC IN)

< LINE FILTER >

Ref. No.		Part No.	Description
LF901	⚠	1-424-150-11	TRANSFORMER, LINE FILTER

****

* 1-635-797-11 MD SW(K10) BOARD
****

Ref. No.	Part No.	Description
	3-360-345-01	HOLDER (PHOTO)
	3-364-125-01	CUSHION (RM)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C690	1-130-177-00	FILM	1uF	5%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
CN691	1-569-895-11	SOCKET, CONNECTOR 17P

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

TUNER

Ref. No.	Part No.	Description			Remark
C33	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C34	1-124-927-11	ELECT	4.7uF	20%	100V
C35	1-124-902-00	ELECT	0.47uF	20%	50V
C36	1-124-791-11	ELECT	1.0uF	20%	100V
C37	1-124-902-00	ELECT	0.47uF	20%	50V
C38	1-124-927-11	ELECT	4.7uF	20%	100V
C39	1-123-875-11	ELECT	10uF	20%	50V
C40	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C41	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C52	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C53	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C54	1-124-902-00	ELECT	0.47uF	20%	50V
C55	1-124-902-00	ELECT	0.47uF	20%	50V
C60	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C61	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C62	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C65	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C70	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C71	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C73	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< FILTER >			
CF1	1-579-185-21	FILTER, CERAMIC			
CF2	1-579-185-21	FILTER, CERAMIC			
CF3	1-579-185-21	FILTER, CERAMIC			
		< CONNECTOR >			
CN1	1-569-843-11	SOCKET, CONNECTOR 15P			
CN2	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CN3	* 1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CN4	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CP2	1-236-571-11	ENCAPSULATED COMPONENT			
		< TRIMMER >			
CT1	1-141-411-11	CAP, ADJ 20PF			
CT2	1-141-410-11	CAP, ADJ 10PF			
CT3	1-141-411-11	CAP, ADJ 20PF			
		< DIODE >			
D5	8-719-945-44	DIODE SVC203CP-A			
D6	8-719-945-44	DIODE SVC203CP-A			
D7	8-719-945-31	DIODE SVC341-L			
D70	8-719-400-18	DIODE MA152WK			
		< FILTER >			
FL1	1-236-022-11	FILTER, BAND PASS			
		< IC >			
IC1	8-752-050-20	IC CXA1238S			

Ref. No.	Part No.	Description			Remark
		< JUMPER >			
JR5	1-216-295-00	METAL CHIP	0	5%	1/10W
JR6	1-216-295-00	METAL CHIP	0	5%	1/10W
JR7	1-216-296-00	METAL CHIP	0	5%	1/8W
JR8	1-216-295-00	METAL CHIP	0	5%	1/10W
JR9	1-216-296-00	METAL CHIP	0	5%	1/8W
JR12	1-216-295-00	METAL CHIP	0	5%	1/10W
JR17	1-216-296-00	METAL CHIP	0	5%	1/8W
JR18	1-216-296-00	METAL CHIP	0	5%	1/8W
JR19	1-216-295-00	METAL CHIP	0	5%	1/10W
JR20	1-216-295-00	METAL CHIP	0	5%	1/10W
JR21	1-216-296-00	METAL CHIP	0	5%	1/8W
JR22	1-216-296-00	METAL CHIP	0	5%	1/8W
JR23	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L1	1-426-545-11	COIL, RF			
L2	1-406-386-11	COIL (OSC)			
L3	1-402-467-11	ANTENNA, FERRITE-ROD			
L4	1-406-216-11	COIL (OSC)			
L8	1-236-836-11	FILTER, LOW PASS			
L9	1-236-836-11	FILTER, LOW PASS			
L10	1-410-993-11	INDUCTOR, CHIP 1uH			
		< LINK >			
PS1	⚠ 1-532-727-11	LINK, IC ICP-N5 (0.25A)			
		< TRANSISTOR >			
Q2	8-729-902-99	TRANSISTOR DTC114TK			
Q3	8-729-900-98	TRANSISTOR DTC143TK			
Q4	8-729-102-07	TRANSISTOR 2SC2223-F13			
Q5	8-729-900-52	TRANSISTOR DTC114YK			
Q8	8-729-102-07	TRANSISTOR 2SC2223-F13			
Q9	8-729-900-52	TRANSISTOR DTC114YK			
Q10	8-729-900-52	TRANSISTOR DTC114YK			
Q11	8-729-900-52	TRANSISTOR DTC114YK			
Q12	8-729-900-52	TRANSISTOR DTC114YK			
Q16	8-729-920-31	TRANSISTOR DTC343TK			
Q17	8-729-920-31	TRANSISTOR DTC343TK			
Q26	8-729-900-52	TRANSISTOR DTC114YK			
Q27	8-729-102-07	TRANSISTOR 2SC2223-F13			
Q32	8-729-902-99	TRANSISTOR DTC114TK			
		< RESISTOR >			
R5	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R6	1-216-097-00	METAL CHIP	100K	5%	1/10W
R7	1-216-077-00	METAL CHIP	15K	5%	1/10W
R8	1-216-097-00	METAL CHIP	100K	5%	1/10W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< IC >	
IC151	8-759-150-33	IC uPC2501H-1	
IC251	8-759-150-33	IC uPC2501H-1	
IC351	8-759-604-78	IC M5216FP	
IC451	8-759-962-08	IC BA6208	
IC901	8-759-513-10	IC BA3924-V3	
		< COIL >	
L451	1-408-426-00	INDUCTOR 270uH	
		< LINK >	
PS451 ⚠·	1-576-122-21	LINK, IC	
		< TRANSISTOR >	
Q151	8-729-902-99	TRANSISTOR DTC114TK	
Q251	8-729-902-99	TRANSISTOR DTC114TK	
Q351	8-729-902-99	TRANSISTOR DTC114TK	
Q352	8-729-901-03	TRANSISTOR DTC144WK	
Q353	8-729-907-03	TRANSISTOR FMG5	
Q354	8-729-900-52	TRANSISTOR DTC114YK	
Q901	8-729-924-90	TRANSISTOR 2SB1370-EF	
		< RESISTOR >	
R151	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R153	1-216-009-00	METAL CHIP 22 5% 1/10W	
R154	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R155	1-216-009-00	METAL CHIP 22 5% 1/10W	
R156	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R157	1-249-381-11	CARBON 1 5% 1/4W	
R158	1-249-381-11	CARBON 1 5% 1/4W	
R159	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R160	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R161	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R162	1-216-013-00	METAL CHIP 33 5% 1/10W	
R163	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R164	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R251	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R253	1-216-009-00	METAL CHIP 22 5% 1/10W	
R254	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R255	1-216-009-00	METAL CHIP 22 5% 1/10W	
R256	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R257	1-249-381-11	CARBON 1 5% 1/4W	
R258	1-249-381-11	CARBON 1 5% 1/4W	
R259	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R260	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R261	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R262	1-216-013-00	METAL CHIP 33 5% 1/10W	
R263	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R264	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R350	1-216-037-00	METAL CHIP 330 5% 1/10W	
R351	1-216-025-00	METAL CHIP 100 5% 1/10W	
R352	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R353	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R354	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R355	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R356	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R357	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R359	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R360	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R451	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R452	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R901	1-216-089-00	METAL CHIP 47K 5% 1/10W	

****

* 1-612-589-12 READER DETECTION BOARD
****

Ref. No.	Part No.	Description	Remark
		< PHOTO INTERRUPTER >	
PH692	8-719-939-11	PHOTO INTERRUPTER GP-2S09-B	

****

* A-3261-451-A TUNER BOARD, COMPLETE
****

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C6	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C7	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C8	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C9	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C10	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C11	1-124-472-11	ELECT 470uF 20% 10V	
C13	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C15	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C17	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C19	1-163-082-00	CERAMIC CHIP 0.5PF 0.25PF 50V	
C20	1-136-157-00	FILM 0.022uF 5% 50V	
C21	1-136-157-00	FILM 0.022uF 5% 50V	
C22	1-163-100-00	CERAMIC CHIP 20PF 5% 50V	
C23	1-163-134-00	CERAMIC CHIP 510PF 5% 50V	
C24	1-163-083-00	CERAMIC CHIP 1PF 50V	
C25	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C29	1-123-875-11	ELECT 10uF 20% 50V	
C30	1-123-382-00	ELECT 3.3uF 20% 100V	
C31	1-124-126-00	ELECT 47uF 20% 10V	
C32	1-124-791-11	ELECT 1.0uF 20% 100V	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
R9	1-216-097-00	METAL CHIP 100K 5%	1/10W
R11	1-216-089-00	METAL CHIP 47K 5%	1/10W
R12	1-216-049-00	METAL CHIP 1K 5%	1/10W
R13	1-216-097-00	METAL CHIP 100K 5%	1/10W
R14	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R15	1-216-041-00	METAL CHIP 470 5%	1/10W
R16	1-216-025-00	METAL CHIP 100 5%	1/10W
R17	1-216-073-00	METAL CHIP 10K 5%	1/10W
R18	1-216-025-00	METAL CHIP 100 5%	1/10W
R19	1-216-049-00	METAL CHIP 1K 5%	1/10W
R20	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R21	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R22	1-216-105-00	METAL CHIP 220K 5%	1/10W
R23	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R24	1-216-105-00	METAL CHIP 220K 5%	1/10W
R25	1-216-073-00	METAL CHIP 10K 5%	1/10W
R27	1-216-073-00	METAL CHIP 10K 5%	1/10W
R34	1-216-073-00	METAL CHIP 10K 5%	1/10W
R35	1-216-089-00	METAL CHIP 47K 5%	1/10W
R36	1-216-009-00	METAL CHIP 22 5%	1/10W
R37	1-216-041-00	METAL CHIP 470 5%	1/10W
R40	1-216-083-00	METAL CHIP 27K 5%	1/10W
R49	1-216-035-00	METAL CHIP 270 5%	1/10W
R53	1-216-049-00	METAL CHIP 1K 5%	1/10W
R54	1-216-037-00	METAL CHIP 330 5%	1/10W
R55	1-216-045-00	METAL CHIP 680 5%	1/10W
R70	1-216-049-00	METAL CHIP 1K 5%	1/10W
R72	1-216-049-00	METAL CHIP 1K 5%	1/10W
R73	1-216-097-00	METAL CHIP 100K 5%	1/10W
R74	1-216-097-00	METAL CHIP 100K 5%	1/10W
R75	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R76	1-216-049-00	METAL CHIP 1K 5%	1/10W
R77	1-216-085-00	METAL CHIP 33K 5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV1	1-238-601-11	RES, ADJ, CARBON 22K	

****

* 1-635-074-21 VOL BOARD
****

* 1-535-303-00 WIRE, JUMPER

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN375	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN376	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV375	1-238-177-11	RES, VAR, CARBON 50K/50K (VOLUME) (INCLUDING VOLUME MOTOR)	

****

* 1-635-073-21 VOL MOTOR BOARD
****

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C452	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C453	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN452	* 1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	

< COIL >

Ref. No.	Part No.	Description	Remark
L451	1-408-403-00	INDUCTOR 3.3uH	
L452	1-408-403-00	INDUCTOR 3.3uH	

****

MISCELLANEOUS
****

Ref. No.	Part No.	Description	Remark
12	1-452-419-21	MAGNET	
53	1-634-546-11	CD-RF-A FLEXIBLE BOARD	
101	1-533-217-31	HOLDER, FUSE	
204	⚠ 8-848-169-01	DEVICE, OPTICAL KSS-224A	
ANT1	1-501-378-11	ANTENNA, TELESCOPIC	
F901	⚠ 1-532-350-00	FUSE (4A)	
HRP101	A-3113-038-A	HEAD ASSY, ROTARY (REC/PB/ERASE)	
M701	X-2644-016-1	MOTOR ASSY G(RP)	
M702	X-2644-014-1	MOTOR ASSY, SPINDLE	
M901	A-3133-405-A	MOTOR ASSY, CAPSTAN	
M902	A-3133-406-A	MOTOR ASSY, REEL	
PM691	1-454-533-11	SOLENOID, PLUNGER	
S791	1-570-112-11	SWITCH, LEAF (LIMIT IN)	
S801	1-571-283-11	SWITCH, LEAF (OPEN/CLOSE)	
SP101	1-544-390-11	SPEAKER	
SP201	1-544-390-11	SPEAKER	
T901	⚠ 1-450-389-11	TRANSFORMER, POWER (AEP, G, IT)	
T901	⚠ 1-450-432-11	TRANSFORMER, POWER (UK)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
		ACCESSORY & PACKING MATERIAL	
	1-465-452-11	COMMANDER, REMOTE (RMT-C10)	
⚠	1-558-032-11	CORD, POWER (UK)	
⚠	1-575-131-11	CORD, POWER (AEP, G, IT)	
	3-752-083-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH)	
	3-752-083-41	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN, PORTUGUESE) (AEP, IT)	

****

HARDWARE LIST

Ref.No.	Part No.	Description	Remark
# 1	7-685-647-79	SCREW, TAPPING +BV 3X10	
# 2	7-685-152-19	SCREW +P 3X25 TYPE2 NON-SLIT	
# 3	7-621-255-20	SCREW +P 2X4	
# 4	7-621-255-10	SCREW +PTT 2X3 (S)	
# 5	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
# 6	7-623-953-01	WASHER	
# 7	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
# 8	7-621-772-00	SCREW +B 2X3	
# 9	7-685-646-79	SCREW, TAPPING +BV 3X8	
#10	7-682-547-09	SCREW +B 3X6	
#11	7-682-550-04	SCREW +P 3X12	
#12	7-621-255-15	SCREW +P 2X3	
#13	7-682-548-09	SCREW +BVTT 3X8 (S)	
#14	7-624-106-04	STOP RING 3.0, TYPE -E	
#15	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#16	7-627-552-88	SCREW, PRECISION +P 1.7X2.2	
#17	7-621-772-20	SCREW +B 2X5	
#18	7-621-770-67	SCREW +P 2.6X6	
#19	7-621-773-86	SCREW +P 2.6X4	
#20	7-627-553-47	PRECISION SCREW +P 2X4 TYPE 3	
#21	7-685-782-01	SCREW +PTT 2X5 (S)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

English
91C0461-1
Printed in Japan
© 1991. 3

9-956-011-11

Sony Corporation
General Audio Group

Published by Customer Relations and Service Group